VOL. XX, No. 1
JANUARY, 1954

Main

Journal of the

AMERICAN PHARMACEUTICAL ASSOCIATION

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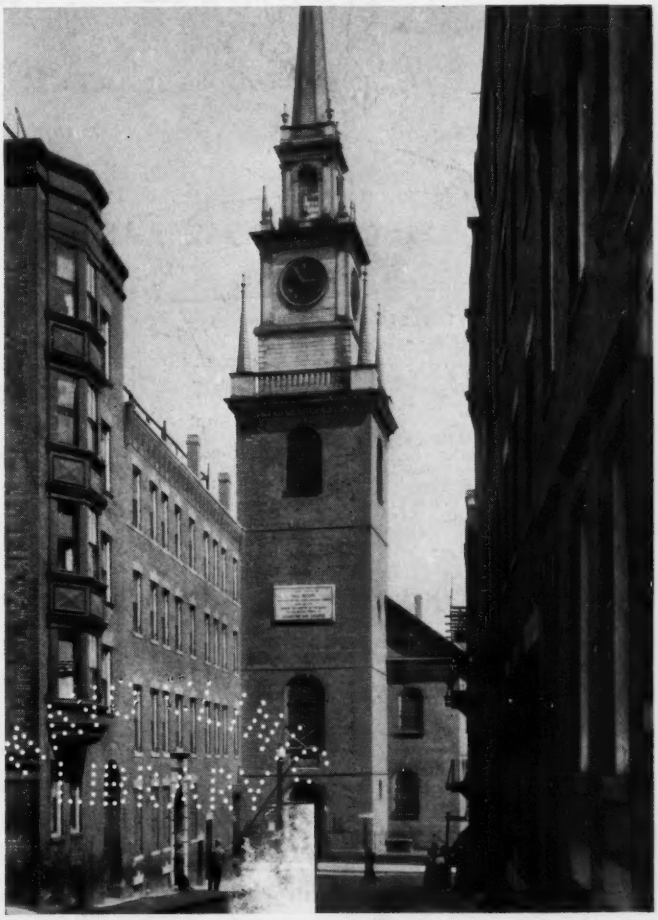

Historic Old North Church—A Boston Landmark
(See page 30)

Practical Pharmacy Edition

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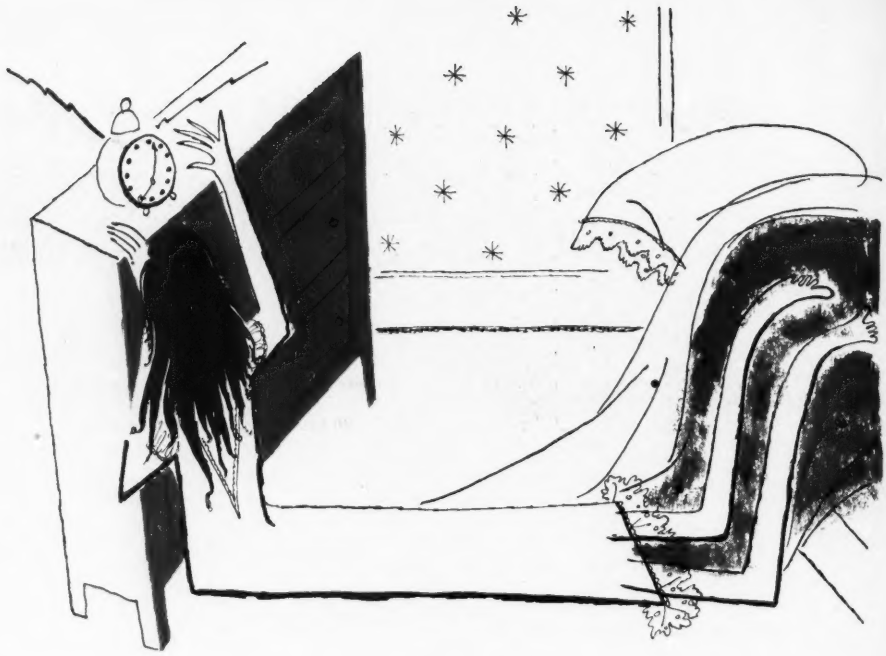

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Pantothenic Acid..... 6 mg.
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Stomach-Liver Digest.... 1.5 Gm.

*MDR—Minimum Daily Requirement
†RDA—Recommended Daily Dietary Allowance

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Journal of the

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JANUARY, 1954

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The first motion-sickness preventive that is effe

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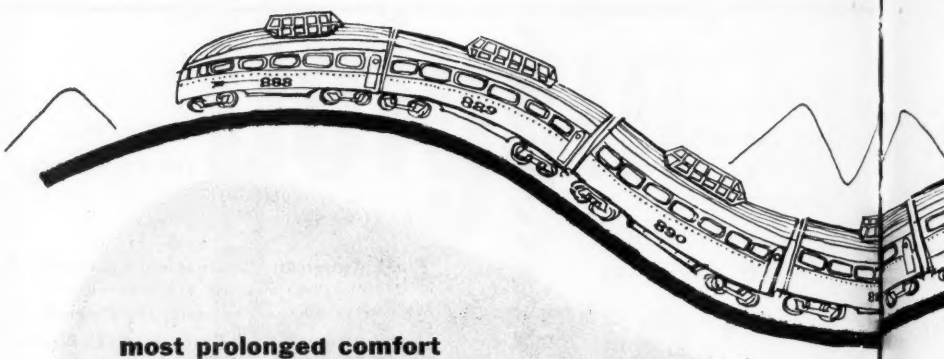

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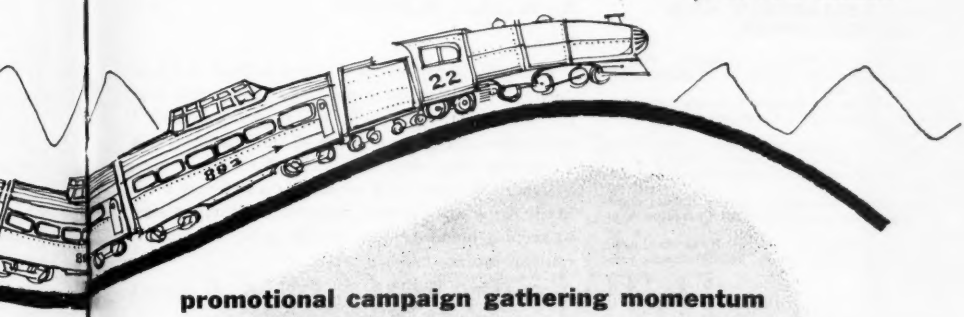

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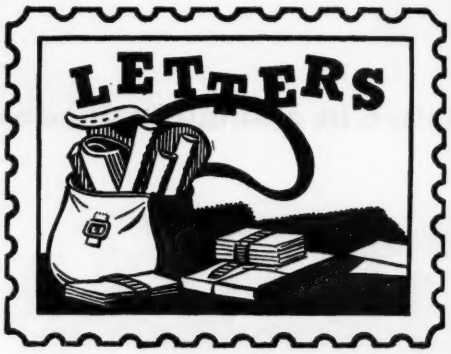

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Especially now that I am serving a two-year hitch in the Army, the JOURNAL has even more importance in keeping me abreast of the change in the pharmaceutical profession.

Camp Pickett, Va. PVT. JOHN J. ABBOTT

Noble Interests in Pharmacy

Sirs:

I am interested in maintaining my membership in the A.PH.A. which I believe to be the best of the present pharmaceutical associations on a national scale. Your noble interests in pharmacy as a profession is balanced by the practical ideas and actions of the organization.

I am proud to be a member of the A.PH.A. Keep up your good work.

Phoenixville, Pa. PVT. HARRY TERRIS

Membership While in Service

Sirs:

It would be appreciated if you would transfer my membership to an associate member basis, a privilege extended to those in service. At the time my renewal is due, you can send me an associate membership statement and I will then forward the necessary amount of money to pay for my subscription to both Editions of the JOURNAL.

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Members of the American Pharmaceutical Association are invited to submit their professional problems to The Journal, 2215 Constitution Ave., N. W., Washington 7, D. C., giving all pertinent details.

Alkaline Rhubarb Infusion

What is rhubarb infusion alkaline?—A. B. G., Washington.

Alkaline rhubarb infusion is a cold infusion of 30 Gm. of rhubarb fragments (no powder), 6 Gm. of sodium carbonate, and 300 cc. of water. After maceration for 12 hours, strain, adding cold water through the strainer to make 300 cc. Add 600 cc. of alcohol, set aside for 24 hours, then filter, distill off the alcohol and heat the liquid on a water bath until all odor of alcohol has disappeared, then make to 300 cc. with water. Keep in a cool place.

Para-aminosalicylic Acid Suspension

Can you supply information about a suspension of p-aminosalicylic acid, the sodium salt, or the calcium salt, to contain about 15 Gm. of p-aminosalicylic acid to the dose. The material is not to be encapsulated.—R. G. M., California.

The salts of *p*-aminosalicylic acid are usually given because the free acid is more irritating to the gastrointestinal tract. The sodium salt is freely soluble in water, and a small amount of solution would contain the desired dosage of 15 Gm. A 10 per cent solution of *p*-aminosalicylic acid sodium salt is marketed by The S. E. Massengill Company. This might suit your purpose as a suspending medium.

A suspension of *p*-aminosalicylic acid can be prepared using a 2 per cent solution of methylcellulose 400 c.p.s. The masking flavor might be licorice, but sweetened fruit flavors might be tried. Extemporaneous suspensions containing more than 10 per cent of *p*-aminosalicylic acid in sodium bicarbonate solutions are administered orally.

Methylparafynol Dosage Forms

Can you give me any information about a dosage form of methylparafinol other than capsules?—J. B. Barcelona, Spain.

The Schering Corporation, Bloomfield, N.J., U.S.A., markets methylparafynol (methylparafinol) in capsules and also as a solution. The capsules contain 250 mg. or 500 mg. of methylparafynol, and the solution contains 250 mg. of the drug in 4 ml. This information appeared in THIS JOURNAL, **12**: 629(1951); **13**: 513 (1952); **14**: 625(1953).

Preservatives in Parenteral Solutions

I am interested in obtaining information on preservatives used in parenteral solutions. I would appreciate any information or references pertaining to this subject that you can furnish.—E. A. H., Pennsylvania.

The U.S.P. XIV permits the general use of "not more than 0.5 per cent of chlorobutanol, cresol, phenol, or other suitable preservative, and, in addition, not more than 0.2 per cent of sulfur dioxide, or its equivalent of sodium bisulfite or sodium sulfite" as preservatives in parenteral solutions.

The British Pharmacopoeia 1953, under methods of sterilization of injections, states that: "The solution or suspension is prepared by dissolving or suspending the medicament in a 0.2 per cent w/v solution of Chlorocresol in Water for Injection, or in a 0.002 per cent w/v solution of Phenylmercuric Nitrate in Water for Injection." The liquid, in a proper container, is then heated at 98–100° C. for 30 minutes. "The bactericide used should not interfere with the therapeutic efficacy of the drug or cause a turbidity."

Results of a study of chemical compatibility of a number of antibacterial agents with different types of medicinal compounds were reported in THIS JOURNAL, **14**: 498 (1953).

Zinc Sulfate, Neosynephrine Ophthalmic Solution

I would appreciate any information you can furnish about the following prescription:

Zinc sulfate	*32 mg.*
Neosynephrine Ophthalmic Solution 1/4% *q. s.*	*15 cc.*

The preparation deposited crystals and developed mold-like growths upon standing for a few months.—M. E., San Francisco, Calif.

You do not state whether the prescription was compounded to prepare 1/2 fl. oz. or a larger volume, nor how the solution was kept. If you are preparing large amounts of this solution, you should prepare it under aseptic conditions, and an antibacterial agent should be added. The large stock bottle should be kept in a cool place. A smaller stock bottle should be used for current dispensing.

Zinc sulfate and boric acid are both conducive to mold growth; therefore, it is advisable to prepare amounts of the solution that will be used within a short period of time.

(Continued on page 10)

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From your first days of study, the very watchwords of your professional life have been meticulous accuracy, absolute exactness, and detailed care.

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Duraglas Rx containers are manufactured for the finest prescription service. They protect your reputation by providing chemical inertness, accurate capacities, durability and *professional* appearance.

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• • • • • • • • • • • • • *from page 8*

Solubility of Para-aminobenzoic Acid and Its Sodium Salt in Water

I have seen several references on 20 per cent aqueous solutions of p-aminobenzoic acid. However, I have been unable to obtain such high concentrations, whether as sodium salt (obtained by reaction with sodium carbonate at ebullition), or as hydrochloride.

Perhaps you could let me know the highest concentrations usually obtainable.

Can p-aminobenzoic acid solutions for injection be sterilized by autoclaving, or is tyndallization necessary?—F. F. G., New York.

No official solution of *p*-aminobenzoic acid or of its sodium salt is recognized; therefore no official standards have been set.

A 10 per cent solution of sodium *p*-aminobenzoate is supplied by the S. E. Massengill Co., Bristol, Tenn. Higher concentrations of *p*-aminobenzoic acid are sometimes administered orally as suspensions of the powdered acid in solutions of sodium bicarbonate. These suspensions might be referred to erroneously as solutions.

A report in the *J. Am. Med. Assoc.*, **132,** 911 (1946) refers to the use of a 25 per cent solution of sodium *p*-aminobenzoate in isotonic solution of sodium chloride. The solution was sterilized by Seitz filtration after bringing the *p*H of the solution to approximately 7.0 by addition of small amounts of crystalline *p*-aminobenzoic acid to the solution of the sodium salt in saline. The solution was prepared by the International Vitamin Corporation, 22 E. 40th St., New York 19, N. Y. The solution was administered by intravenous drip.

Modified Phenobarbital Elixir

Can glycerin and alcohol in Phenobarbital Elixir U. S. P. be replaced by propylene glycol?—C. R., Washington, D. C.

The following formula for a modified phenobarbital elixir is offered by S. J. Greco [see THIS JOURNAL, **14,** 424(1953)]:

Phenobarbital	4
Sweet orange peel tincture	30
Amaranth solution	10
Propylene glycol	350
Syrup	150
Distilled water *q. s.*	1,000

The substitution is not permitted in the official monograph, and the product would require explanatory labeling to indicate it is not the U. S. P. product. It is reported to form prescribed mixtures which are as stable, for at least two weeks, as those compounded with the U. S. P. elixir. The problem of flavor must be answered according to the tastes of the compounder and consumer. Anise oil has been suggested for this purpose.

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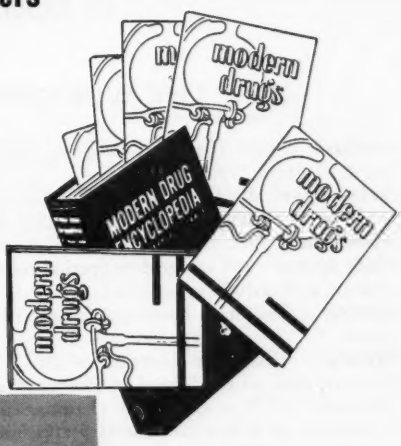

97.2% who receive it...use it
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EARLY AMERICAN PHARMACIES

BY GEORGE B. GRIFFENHAGEN*

XV. THE WISCONSIN PIONEER DRUG STORE

Address: State Historical Society, 816 State Street, Madison, Wis.
Hours Open: Monday through Friday—8:00 a. m. to 5:00 p. m. Saturday—8:00 a. m. to 4:00 p. m.
Admission: Free.
Floor Space: 280 square feet (period room restoration in fourth floor galleries).
Owner: The State Historical Society of Wisconsin.
History: Under the direction of Dr. Edward Kremers, dean of the School of Pharmacy at the University of Wisconsin, and chairman of the Committee on Historical Pharmacy appointed by the Wisconsin Pharmaceutical Association in 1897, the fixtures for the Pioneer Drug Store were collected from all parts of the State. The collection was donated to the State Historical Society where it was first placed upon exhibition in 1913.
Description: All specimens in the Pioneer Drug Store have been used in Wisconsin drugstores between the years 1848 and 1898. The exhibition consists of fixtures from the store of T. H. Spence of La Crosse and Charles Pfeifer of Plymouth. Many interesting pieces of early pharmaceutical manufacturing equipment may also be seen. In front of the restoration is the hitching post which was formerly in front of Dunning and Sumner's Store on the Capital Square, Madison.
References: *The Pioneer Drug Store*, publication of the State Historical Society of Wisconsin, June, 1930, 16 pp. *Pharmaceutical Era*, **50,** 45(1917). *Northwest. Druggist*, **55,** no. 6, 28(1947).

XVI. THE WISCONSIN OLD TIME DRUG STORE

Address: Milwaukee Public Museum, Milwaukee, Wis.
Hours Open: Monday through Saturday—9:00 a. m. to 5:30 p. m. Sunday—1:30 p. m. to 5:00 p. m.
Admission: Free.
Floor Space: 230 square feet (room restoration).
Owner: The Milwaukee Public Museum.
History: Donated by the Milwaukee Druggists and first opened for exhibition in 1934.
Description: A period-room restoration complete with center case and two wings, prescription counter, and glass show cases of the period around 1900. Many interesting pharmaceutical specimens are exhibited including a large brass balance on the counter, show globes, a large assortment of bottles and jars, and an old spittoon on the floor in front of the prescription counter.

---

* Associate Curator, Division of Medicine and Public Health, Smithsonian Institution, Washington, D. C., and Consultant to the A.Ph.A. Museum. The 15th and 16th of a series of monographs describing apothecary shop restorations or exhibition in the United States.

NEW PRESCRIPTION PRODUCTS

All items on which information has been received in the past thirty days are reported here. Manufacturers are urged to send details of their new products as early as possible, so that pharmacists, through these pages, will have full information at the same time, or even before, products are detailed to the physician. For inclusion in this free editorial department, send descriptive literature to the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, *2215 Constitution Avenue, N. W., Washington, D. C. Where possible, all descriptions should follow the style shown on these pages.*

Calinese Tablets

Description: Each tablet contains: precipitated calcium carbonate, 500 mg.; magnesium carbonate, 60 mg.; and magnesium trisilicate, 200 mg.
Indications: For symptomatic relief of gastric hyperacidity.
Administration: As an antacid—one to two tablets with or without water, repeated as necessary.
Form Supplied: Bottles of 100 and 500 tablets.
Source: Charles C. Haskell & Company, Inc., Richmond, Va.

Cobedoce Capsules

Description: Each capsule contains: cobalt gluconate, 25 mg.; vitamin B_{12} (from *Streptomyces* fermentation extractives), 5 mcg.; desiccated stomach substance (not U. S. P.), 150 mg.; ferrous gluconate, 200 mg.
Indications: For treatment of macrocytic, microcytic, normocytic, and infectious anemias.
Administration: One to three capsules daily as directed by physician. Blood counts should be performed routinely.
Form Supplied: Bottles of 100 and 500 capsules.
Source: Lincoln Laboratories, Inc., Decatur, Ill.

Cortril Aqueous Suspension

Description: Each cc. contains 25 mg. of hydrocortisone acetate.
Indications: For treatment of joint disorders associated with rheumatoid arthritis and osteoarthritis.
Administration: By injection into affected joint.
Form Supplied: 5-cc. vials.
Source: Pfizer Laboratories, Division of Chas. Pfizer & Company, Brooklyn, N. Y.

Cortril Ophthalmic Ointment

Description: Ophthalmic ointment containing 0.5 and 2.5 per cent of hydrocortisone acetate.
Indications: For treatment of allergic, bacterial, and traumatic eye inflammations.
Administration: Locally, as prescribed by physician.
Form Supplied: $^1/_8$-oz. tubes.
Source: Pfizer Laboratories, Division of Chas. Pfizer & Company, Inc., Brooklyn, N. Y.

Cortril Topical Ointment

Description: Ointment containing 1.0 and 2.5 per cent of hydrocortisone acetate.
Indications: For treatment of allergic dermatoses.
Administration: Locally, as prescribed by physician.
Form Supplied: $^1/_6$-oz. tubes.
Source: Pfizer Laboratories, Division of Chas. Pfizer & Company, Inc., Brooklyn, N. Y.

Erythroguent Ointment

Description: An erythromycin ointment with a potency of 5 mg. of the antibiotic per Gm.
Indications: For treatment of bacterial infections of the skin, and to halt infections in burns. Also for external otitis.
Administration: Locally, as prescribed by physician.
Form Supplied: $^1/_2$-oz. tubes.
Source: The Upjohn Company, Kalamazoo, Mich.

Ethaverine Hydrochloride Solution for Injection

Description: Each cubic centimeter contains 15 mg. of ethaverine hydrochloride (tetraethyl homolog of papaverine).
Indications: For treatment of spastic conditions of smooth muscles, including the coronary and vascular areas, gastrointestinal, ureteral, and bronchial tracts.
Administration: 15 to 100 mg. by slow intravenous injection as required. Intramuscular or subcutaneous routes may be used.
Form Supplied: 15-cc. multiple-dose vials.
Source: Lincoln Laboratories, Inc., Decatur, Ill.

(Continued on next page)

Geriatrone Elixir

Description: Each fluidounce (approximately two tablespoonfuls) contains: pancreatin, 126 mg.; pepsin, 126 mg.; betaine monohydrate, 200 mg.; betaine hydrochloride, 100 mg.; liver concentrate, 220 mg.; yeast extract, 220 mg.; vitamin B_{12}-B_{12b} (as streptomyces fermentation extractives), 4 mcg.; inositol 100 mg.; thiamine hydrochloride, 4 mg.; riboflavin, 2 mg.; pyridoxine hydrochloride, 2 mg.; panthenol, 2 mg.; niacinamide, 20 mg.; calcium glycerophosphate, 300 mg.; manganese glycerophosphate, 15 mg.; alcohol, 15 per cent by volume.

Indications: For use as a digestive aid, and vitamin and mineral source.

Administration: One to two tablespoonfuls daily, or more as needed, before or with meals.

Form Supplied: 16-oz. and 1-gal. bottles.

Source: U. S. Vitamin Corporation, New York, N. Y.

Hexathricin Aeropak

Description: Each 6-oz., pressure-packaged Aeropak contains: Hexakose (hexadenol, mixture of tetracosanes and oxidation products thereof), 8 Gm.; *p*-chloro-*m*-xylenol, 800 mg.; benzethonium chloride, 80 mg.; tyrothricin, 40 mg.; ethyl *p*-aminobenzoate, 1.6 Gm.—in a water-soluble base, with nonflammable propellants.

Indications: For therapeutic treatment of burns of all degrees of severity, pyodermas, and fungus diseases of the skin.

Administration: Spray on traumatized area as required. Dressings are optional. Exposure method, gauze dressings, or pressure dressings may be used.

Form Supplied: 6-oz. Aeropak container.

Source: Lincoln Laboratories, Inc., Decatur, Ill.

Hexathricin Otic

Description: Each cc. contains *p*-chloro-*m*-xylenol, 40 mg.; benzethonium chloride, 1 mg.; tyrothricin, 1 mg.; ethyl *p*-aminobenzoate, 20 mg.—in polyethylene glycol. Solution is stable, water-miscible, anhydrous, nonoily, compatible with ear secretions, and a solvent for cerumen and susceptible debris.

Indications: For treatment of pain and infection caused by bacteria and fungi in external and middle ear.

Administration: Topically, by drop, swab, or wick, every three to four hours.

Form Supplied: 10-cc. bottles with separate droppers.

Source: Lincoln Laboratories, Decatur, Ill.

Hexaverine Tablets

Description: Each double-scored tablet contains: ethaverine hydrochloride, 25 mg.; mannitol hexanitrate, 20 mg.; phenobarbital, 8 mg.

Indications: For treatment of conditions requiring vascular relaxation, such as peripheral arterial sclerosis, Raynaud's disease, Buerger's disease, intermittent claudication, as well as treatment of biliary spasm and prophylaxis of angina pectoris.

Administration: One to three tablets every four to six hours and at bedtime as prescribed by physician.

Form Supplied: Bottles of 100 and 1,000 tablets.

Source: Lincoln Laboratories, Inc., Decatur, Ill.

Marezine Tablets

Description: Each scored tablet contains 50 mg. of Marezine (N-benzhydryl-N′-methyl piperazine monohydrochloride).

Indications: For relief or prevention of motion sickness.

Administration: Prophylactic—one tablet one-half hour before traveling. Therapeutic—one tablet three times daily, before meals. Children under ten years: $^1/_2$ tablet (25 mg.) per dose.

Form Supplied: Bottles of 100 and 1,000 tablets.

Source: Burroughs Wellcome & Co. (U. S. A.) Inc., Tuckahoe, N. Y.

Maxitate with Rauwolfia Compound Tablets

Description: Each brown, scored tablet contains: Maxitate (stabilized form of mannitol hexanitrate), 30 mg.; rutin, 30 mg.; and rauwolfia (whole root), 30 mg.

Indications: For treatment of hypertension.

Administration: Usual starting dose is two tablets three times daily. Hypotensive effects should be apparent within seven days. If not, and the medication is well tolerated, dosage may safely be increased to three or four tablets three times daily. Critical adjustment of dosage is unnecessary.

Form Supplied: Bottles of 100 and 1,000 tablets.

Source: R. J. Strasenburgh Company, Rochester, N. Y.

Milontin Kapseals

Description: Each Kapseal contains 0.5 Gm. of Milontin (N-methyl-*alpha*-phenylsuccinimide).

Indications: For the relief of petit mal epilepsy.

Administration: As prescribed by physician.

Form Supplied: Bottles of 100 and 1,000 Kapseals.

Source: Parke, Davis & Company, Detroit Mich.

Readicillin

Description: Suspension contains 60,000 units of penicillin per cc., in a cherry-flavored vehicle.

Indications: For treatment of penicillin-sensitive infections where high initial blood levels are required, especially for pediatric use.

Administration: Orally, as prescribed by physician.

Form Supplied: 60-cc. bottles.

Source: The Upjohn Company, Kalamazoo, Mich.

Syrasulfas Syrup

Description: Each teaspoonful contains: sulfadiazine, 0.167 Gm.; sulfamerazine, 0.167 Gm.; sulfamethazine, 0.167 Gm.—suspended in a flavored syrup.

Indications: For treatment of infections caused by organisms susceptible to the sulfas, such as pneumococcic, streptococcic, staphylococcic, and meningococcic, especially for pediatric use.

Administration: Orally, as prescribed by physician.

Form Supplied: 1-pt. bottles.

Source: The Upjohn Company, Kalamazoo, Mich.

Thevasin Tablets

Description: Each double-scored tablet contains: glyceryl guaiacol ether, 50 mg.; ethaverine hydrochloride, 25 mg.; acetylsalicylic acid, 165 mg. (2½ gr.).

Indications: For treatment of coughs due to colds, and upper respiratory conditions, including bronchitis, bronchial asthma, sinusitis, coryza. Acts to relieve spasm, relax skeletal muscle, liquefy viscid secretions, and provide analgesia without depressing or stimulating side effects.

Administration: One to three tablets every three to four hours and at bedtime as prescribed by physician.

Form Supplied: Bottles of 100 and 1,000 tablets.

Source: Lincoln Laboratories, Inc., Decatur, Ill.

Other New Products

(Chemicals clinical trial drugs, diagnostic aids, and equipment for the retail and hospital pharmacy)

Almebarb Tablets

Meyer Chemical Company, Inc. recently announced a new product, Almebarb Tablets—each pink, triangular tablet containing atropine sulfate, 1/200 gr., and phenobarbital, 1/4 gr. Available in bottles of 100 and 1,000, the tablets are used as an antispasmodic sedative.

Anodynos-DHC Tablets New Package Size

Anodynos-DHC Tablets are now being supplied in packages of 100 tablets, supplementing the 500-size previously introduced by *George A. Breon & Company*. The product is indicated for the relief of pain, febrile conditions, and in treating all types of coughs, including that of tuberculosis.

Bioepiderm—New Name for Biotin Solution

George A. Breon & Company has given the name "Bioepiderm" to its brand of biotin solution, an injectable preparation. Biotin, a member of the vitamin B complex, known also as vitamin H and coenzyme R, is used empirically in the treatment of eczema, poison ivy, atopic dermatitis, and pruritis, where standard therapies have failed. The solution is supplied in 1-cc. ampuls, each cc. containing 0.25 mg. of pure crystalline *d*-biotin in water.

Cenasert, Powder

The Central Pharmacal Company has just announced the introduction of Powder Cenasert as a companion product to Tablets Cenasert. Each 4-oz. bottle of powder contains: aminoacridine hydrochloride, 0.1 per cent; phenylmercuric acetate 0.15 per cent; methylbenzethonium chloride, 0.09 per cent; succinic acid, 0.5 per cent; chlorophyllins (90% soluble), 0.2 per cent; lactose, 35 per cent; papain, 1.25 per cent; boric acid, 62.71 per cent. It is indicated for the treatment of *Trichomonas vaginalis* vaginitis, monilial infestations, and mixed nonspecific infections of the vaginal tract.

Clerex

Clerex, a protective jel, contains a modified carbohydrate gum base. On drying this forms a continuous strong elastic film which adheres to the skin and does not interfere with tactile sensation. It is used to protect the skin against paints, varnishes, adhesives, plastics, lacquers, as well as in chemical plants using various solvents and in plastic plants for polymerizing plastics. The manufacturer is *Hygiene Research, Inc.*

Coricidin Pediatric Medilets

A multi-colored, candy-like tablet with a cherry aroma and flavor, *Schering Corporation's* Coricidin Pediatric Medilets provide a simple dosage form for children for the relief of nasal symptoms of colds. Composed of Chlor-Trimeton Maleate, 0.75 mg.; aspirin, 80 mg.; and acetophenetidin, 16 mg., Medilets are available in bottles of 100.

Dermin—Antiseptic Skin Balm

A lotion containing approximately 0.5 per cent Metoxylin (a mixture of potassium hydroxyquinolin sulfate and chlorocresol), homogenized in a greaseless and stainless oil-in-water emulsion base. It is recommended for its bacteriostatic inhibitory effect upon organisms. It is applied to cleansed skin. It is supplied in 1-oz. tubes by *Bara Farmacal Corporation*, New York, N. Y.

Semets

Semets are antibiotic throat troches which utilize Hyamine, 2 mg.; tyrothricin, 1 mg.; and benzocaine, 3 mg. For the relief of minor throat irritations, Semets are supplied by *S. E. Massengil Company* in bottles of 500 and tins of 12's.

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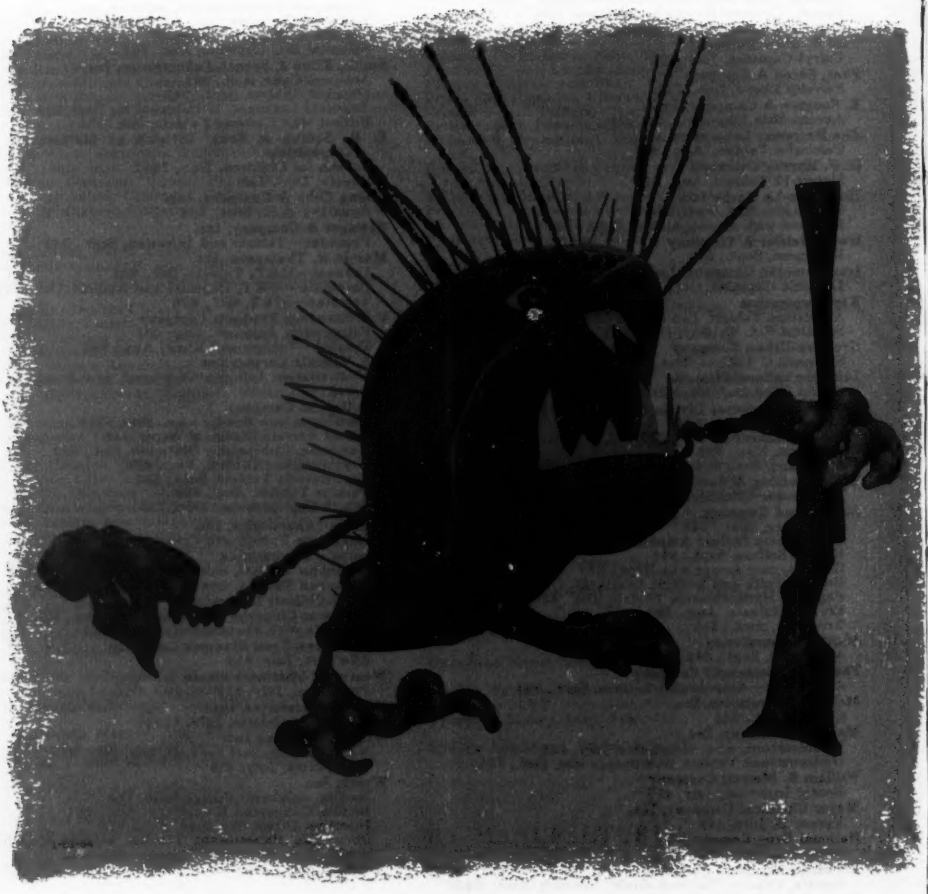

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RECENT

PROGRESS IN MEDICINE

Sulfadimetine (Elkosin) in Ophthalmology

Favorable results with the use of Elkosin [N′(2,6-dimethyl-4-pyrimidyl)-sulfanilamide] in the treatment of some external ocular infections are reported by a Chicago physician. The drug was used as 1 and 5 per cent suspensions in normal saline solution and 1 and 5 per cent ointments in a petrolatum base. Eighty per cent of 40 cases, including 39 with some form of conjunctivitis, improved when treated with 1 per cent preparations of Elkosin. Eighty-eight per cent of 23 cases, including 20 with acute or chronic conjunctivitis, improved when treated with the 5 per cent preparations. The physician concluded that Elkosin, in 5 per cent concentration, can be effectively used for the treatment of acute and chronic conjunctivitis and blepharoconjunctivitis.

[Hurwitz, P., *Am. J. Ophthalmol.*, **36**, 1621(November, 1953).]

Influence of Weight Reduction on Amenorrhea in Obese Women

A study of 32 women at least 20 per cent above ideal weight and with amenorrhea (absence of menses for at least three months) leads two Boston physicians to report the following conclusions: "Obesity and amenorrhea have previously been shown to be commonly associated clinical symptoms. In nearly half of a series of 32 obese women with amenorrhea, weight reduction and resumption of normal menses were accomplished. The prompt onset of menses, which in several cases occurred before a significant amount of weight had been lost, indicates that the decreased obesity is not the only factor concerned in the restoration of the menstrual cycles but that a negative energy balance may exert a favorable influence. It is also possible that obesity and amenorrhea are coincident symptoms of a basic emotional disorder that may respond to formal psychotherapy or to friendly interest and simple reassurance."

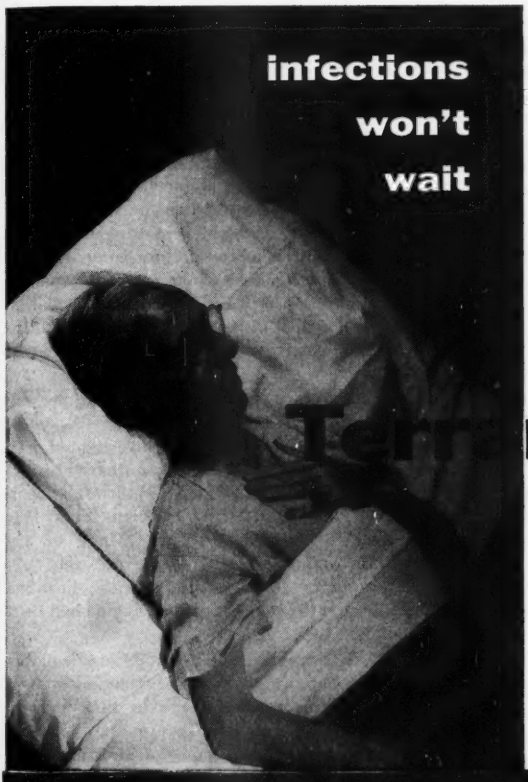
[Mitchell, Geo. W., and Rogers, Joseph, *New Engl. J. Med.*, **249**, 835(November 19, 1953).]

Erythromycin Ointment in Cutaneous Bacterial Infections

Results in the treatment of various types of cutaneous bacterial infections in 184 patients, using different erythromycin ointments, are reported by three physicians. Most of the patients were treated with 0.5 per cent ointments. A combination of 0.5 per cent erythromycin and 0.5 per cent neomycin sulfate ointment was applied to 44 patients. Moniliostatic agents (methylparaben 0.2 per cent and butyl-*p*-hydroxybenzoate 1.8 per cent) were added to the ointment used for some patients. The ointment bases used included (*a*) white petrolatum, (*b*) wool fat-petrolatum, (*c*) cholesterol-petrolatum, and (*d*) Aquaphor (a hydrophilic ointment containing hydroxyl animal fats). A water-miscible base was not used because of the instability of erythromycin in such a medium. The physicians did not evaluate the comparative efficacy of the different ointment bases, but they noted no significant difference; they noted no statistically significant difference between the effects of ointments containing erythromycin and neomycin sulfate or only erythromycin. A superior therapeutic effect was apparent when the concentration of erythromycin was increased to 1 per cent in a few cases. All the ointments studied were very effective in all of the 41 patients with primary cutaneous bacterial infections. Patients with impetigo were generally cured in three to seven days. Those with ecthyma were cured in six to fourteen days.

The physicians comment that: "It is almost impossible to define the sensitivity of a given organism to an antibiotic when it is applied topically. One would assume that it is possible to maintain a very high concentration of the antibiotic at the site of involvement in contrast to the relatively low blood level with systemic administration of an antibiotic. In practice, however, the clinical results do not seem to follow this pattern. In most cases, it has been our experience that adequate control of the bacterial infection factor following topical application of the antibiotic may be expected if the sensitivity of the organism is of the order of magnitude of from 0.1 to 10 mcg. per milliliter; the clinical response seems to

(Continued on page 22)



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Recent Progress

•••••••••••••*from page 20*

be more rapid and more predictable if the sensitivity level is not more than from 4 to 6 mcg. per milliliter. In contrast, it is our impression that the clinical results to be expected when the sensitivity level is higher than 10 mcg. are unpredictable and in general not satisfactory."

Of the available antibiotics that are suitable for topical use, the physicians prefer the combination of neomycin sulfate and bacitracin, oxytetracycline, chlorotetracycline, and neomycin sulfate; polymyxin B is the local treatment of choice only for cutaneous infection due to *Pseudomonas* organisms.

It appears that erythromycin is a very effective topical therapeutic agent for staphylococcic and streptococcic primary cutaneous infections; the results in secondary bacterial infections were variable. Three patients had an apparent sensitivity or irritant reaction to erythromycin, and two additional patients had a similar reaction following application of the neomycin-erythromycin combination ointment. One of the ointment bases (lanolin) was not tolerated in three other patients. It is possible that erythromycin is not as well tolerated by denuded and eczematized skin as certain other antibiotics.

[Livingood, C. S., Head, E. S., Johnson, E. A., and Nilasena, S., *J. Am. Med. Assoc.*, **153,** 1266(December 5, 1953).]

Coronary Dilators and Angina

The value of some drugs classified as coronary dilators in the treatment of angina has been reappraised by two physicians. They are particularly critical of procedures that have been used to evaluate the drugs. After preliminary tests with animals, the drugs must be investigated in patients with coronary disease. The authors noted that, from even a casual survey of the literature dealing with the medical treatment of angina, confusion and conflicting reports surround the use of each of the coronary dilator drugs currently in favor. Such discrepancy in results has as its basis the poorly designed clinical experiment. Several factors are of major importance—some concern the object of the study, others the investigator.

It should hardly be necessary to advise, in the study of so highly a subjective ailment as angina, the need for repeated substitution of a placebo for the therapeutic agent. Mention should be made of patients who respond readily to the "ceremony of therapy." These are persons who show improvement regardless of what drug is used. They get better, as far as angina is concerned, even when a placebo is used in the double blind test.

Bias on the part of the investigator, whether it is conscious or unconscious, is a major source of error in such clinical studies. In its more benign form, this expresses itself by an enthusiastic approach on the part of the observer or through suggestion by use of leading questions.

Earlier clinical experience with papaverine and visammin (khellin) made the physicians realize, in 1949, that in any such study not only the patient but the observer must be unaware of whether an active drug or placebo is being administered. This technique has been termed the double blindfold method. Others have relied solely upon relief of pain as a criterion of the efficacy of a particular agent. They have rejected exercise tolerance or hypoxemia tests because reponse to these procedures varies spontaneously in patients and requires repeated testing over long control periods to make their use at all worthwhile. More important, these tests are artificial and are not comparable to the clinical situation that evokes anginal pain. It cannot be shown that there is a high correlation between the ability of a drug to prevent electrocardiographic changes under stress and to prevent anginal pain.

In 1949, employing the double blindfold method, the effect of dioxyline phosphate (Paveril) on 20 patients with severe angina was investigated. In these patients, observed up to six months, no benefit was noted. In studies of pentaerythritol tetranitrate (Peritrate) in 1950, the physicians found that it exerted no significant benefit. Many of the patients on whom this drug was tested were previously subjects for the study with dioxyline phosphate, and the vagaries of their angina had been well characterized.

In 1950, in the resurvey of visammin, the drug was made available to members of the attending staff at Michael Reese Hospital for use in their private practice. It was understood that, as they reported their results to the dispensing agent, substitution of drug for placebo or placebo for drug would be made without their knowledge. By this technique, it was not possible to demonstrate significant relief of pain in any but an occasional patient. Side-reactions occurred in a third of such patients and necessitated discontinuance of the drug in 50 per cent of the group. When confronted with the data of such blind testing, the staff soon could not be induced to continue the use of visammin.

The physicians state that procaine amide (Pronestyl) hydrochloride or quinidine have practically supplanted the use of papaverine in abolishing ectopic ventricular rhythms.

At present, the effect of estrogens on the anginal syndrome is under investigation. This is not a study of coronary dilators but of agents acting on coronary wall lesions. The ability of these substances to prevent or induce regression of coronary atherosclerosis looms as a highly promising lead. It is much too early to speak of results.

Rigid attention to the sources of error in clinical investigations on angina pectoris would go a long way in resolving the value of the multiple forms of therapy now currently employed and would give security in testing new ones.

(Siber, E. N., and Katz, L. N., *J. Am. Med. Assoc.*, **153:** 1075, November 21, 1953.)

LEGAL ACTIONS OF THE

U.S. Food and Drug Administration

COURT JUDGMENTS NOVEMBER, 1953

Over-The-Counter Sales of Prescription Drugs

Washington, D. C.—Sold amphetamines and barbiturates without physicians' prescriptions. One defendant: sentencing deferred pending report from probation officer.

Chicago, Ill.—Sold barbiturates, sulfonamides, and Ergotrate Maleate without physicians' prescriptions. Three defendants: firm fined $100; two individuals fined $200 each and court costs of $42.40.

Chicago, Ill.—Sold amphetamines and sulfonamides without physicians' prescriptions. One defendant fined $500 and court costs of $38.60.

Asbury Park, N. J.—Sold barbiturates and sulfonamides without physicians' prescriptions. Three defendants: firm fined $1,000; one individual fined $350, the other, $250; each defendant placed on probation for one year.

Camden, N. J.—Sold Apiol and Ergot and sulfonamides without physicians' prescriptions. One defendant fined $250 and placed on probation for three years.

Portland, Ore.—Sold amphetamines without physicians' prescriptions. One defendant fined $500.

Lawrenceburg, Tenn.—Sold sulfonamides, Axotal, and Neopenzine without physicians' prescriptions. Two defendants: one fined $3; the other, $1.

Cradock, Va.—Sold barbiturates without physicians' prescriptions. One defendant fined $900.

Norfolk, Va.—Sold amphetamines and barbiturates without physicians' prescriptions. One defendant fined $450.

Misbranded Drugs

Chicago, Ill.—Labeling of "Green Kaps" failed to bear adequate directions for use for the condition for which the drug was to be used. One defendant fined $350 and court costs of $37.60.

An order issued by the Federal Trade Commission prohibits false and misleading advertising of Charles Antell Formula No. 9, Charles Antell Shampoo and Hexachlorophene Soap. Among other things, the order forbids claims that Formula No. 9 will prevent baldness or loss of hair; restricts claims concerning its lanolin content; bans advertisements representing that the hormone content has any cleansing action; and prohibits misrepresentation of effectiveness of Hexachlorophene Soap.

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THE ASSOCIATION EXTENDS A CORDIAL WELCOME TO THE FOLLOWING MEN AND WOMEN WHO WERE ACCEPTED FOR ACTIVE MEMBERSHIP DURING THE MONTH PRECEDING PREPARATION OF THIS ISSUE.

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Schneider, Elton R., Avondale

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Gray, Charles R., Los Angeles
Gutierrez, Eliseo, Los Angeles
Hachtel, Viola, Oakland
King, James, C., Petaluma
Manuel, John H., Riverside
Mayer, John F., San Bruno
Nelson, C. E., Los Altos
Preston, John E., San Francisco
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Kachman, Max, Chicago

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Holder, Ivan W., Monticello
McCurdy, Marian E., Marion

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Rossberg, William C., Baltimore
Schaech, Dorothy F., Baltimore
Snellinger, J. Ernest, Ellicott City

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Craycraft, Vernon R., Kirkwood
Shafer, William A., St. Louis
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Moravec, Daniel F., Lincoln

NEVADA

Burton, Russell H., Reno

NEW JERSEY

Brenner, Samuel, Bridgeton
Buck, Robert R., Rahway
Callery, John V., Irvington
Castaldi, Salvatore L., Vineland
Giacalone, A. Vincent, Vineland
Winslow, William D., Vineland

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Cennerazzo, Dante, Mount Vernon
Friedman, Marvin R., New York City
Hackel, Joseph P., New York City
Kelz, Francoise A., Scarsdale
Markunas, Walter M., Sunmount
Reife, Milton, Yonkers
Rueckert, Irma, Maspeth
Shainmark, Albert C., New York City

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Gennari, Giampiero, Philadelphia
Hompe, Robert W., Philadelphia
Kaplan, Anna N. B., Philadelphia
Kingsley, Donald W., Jr., Drexel Hill
Koenig, Otto L., Jr., Glenside
Mayron, David, Philadelphia
Mecca, Sebastian B., Feasterville
Menne, Jerome A., Philadelphia
Ringer, Theodore H., Jenkintown

RHODE ISLAND

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Taylor, William K., Bristol
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TEXAS

Garcia, Victor R., Pharr

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Brewer, Donald J., Seattle
Chinn, Bertha G., Seattle
Edmiston, Bill, Bellevue
Foster, John H., Seattle
Huhn, J. R., Jr., Seattle
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Kempinsky, H. A., Seattle
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Pence, Charles R., Seattle
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Smith, Esther S., Seattle
Thiel, Alfred H., Seattle
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Glaser, Emily, Grafton

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West, Ellsworth M., Anchorage, Alaska

CANADA

Aidelman, Ben Wolfe, Toronto, Ont.
Lett, John, Vancouver, B. C.

Deceased Members

Famular, Paul P., Ramsey, N. J., Nov. 24, 1953
Gammon, Irving Parker, Laconia, N. H. (Life Member)
Geue, Fred A., Portland, Oreg.
Montgomery, William J., New Orleans, La.
Nachman, Louis J., Columbus, Ohio, May 20, 1952
Zuck, Frank J., Rockford, Ill., Mar. 23, 1953

The Strengths of Pharmacy

1953
REMINGTON MEDAL
ADDRESS

by Dr. Hugh C. Muldoon*

In this first of three chapters into which we have divided the 1953 Remington Medal Address, Dr. Muldoon traces American Pharmacy's Public and Professional Relationships from its colonial origins to the present day. In subsequent installments of this magnificent portrayal of Pharmacy's Strengths he covers Pharmaceutical Industry, Education, Specialization, Organization and Administration.

I

PRAISE can be pleasant. Criticism often hurts. Pharmacy and pharmacists have long been subject to praise and to criticism, both in liberal amounts. It is easy to find fault and to condemn. Pharmacy is not perfect—far from it. Pharmacists aren't paragons of virtue either. We don't find them pictured in stained glass windows, it is true. Neither do we find them in rogues' galleries.

Admittedly, pharmacy and pharmacists have weaknesses and faults, too many of them, both great and small. They distress us. We deplore them. But there is much about pharmacy that is right. If we look, we can find a multitude of things to commend, to rejoice in, to be grateful for.

Continued concentration on pharmacy's defects may blind us to its benefits. So, tonight, let's consider our profession, not in its commercial aspects, but pharmacy at its best, as an indispensable activity in the public health field. Let's examine its soundness, its merits, its excellences—not its demerits.

We have nothing startling or new to say, perhaps, but we may express our ideas a little differently. Our discussion will be one-sided and incomplete, deliberately so. Someday, someone else in another place may deal with pharmacy's defects—and explain and apologize and defend. This evening, for a few minutes, let's consider some of the Strengths of Pharmacy.

* Dean, College of Pharmacy, Duquesne University, Pittsburgh, Pa.

Public and Professional Relationships

Centuries ago, pharmacy was a clandestine art. It had to be. There were things to conceal. Today, there is nothing to hide. We have much to be proud of. Pharmacy is no longer a secret profession, but most people know far too little about it, about the pharmacist, his professional activities, his training, his competence, his ideas, his ideals.

With much of our profession the public has no contact. The casual observer is unaware of its extent and its diversity. Many think of the pharmacist only as a business man, not as the conscientious guardian of the health of the people he really is. It is time, I think, to turn the full beam of the spotlight of public attention on pharmacy. We should tell the public more about our profession and about ourselves. A one-day or a one-week program is not enough. It is a years-long task if people are to know well the men in whose hands every day they so confidently trust their lives.

Pharmacists are respected public servants. They should be. They labor competently and diligently to promote and to protect the nation's physical health. It is this valuable service—and this service alone—that justifies the perpetuation, and the continued legal protection, of our profession.

Modern pharmacists perform a front-rank medical work, one that is essential to the well-being of society. They fulfill a great human need. Long centuries of dependable service, based on abundant competence, sound moral character, and demonstrated worth, have earned for pharmacists public trust, and confidence, and good will.

Pharmacy is not an ivory-tower profession. It is now, and it always has been, close to those it serves. Patrons know their pharmacists personally. They rely upon them. They respect their counsel and advice. The pharmacist takes

pride in his skill in human relationships. He serves with equal care and courtesy the eminent and the obscure, the aristocrat and the socially disinherited.

He is, of course, a proper source to the public of information on matters dealing with medicines and with general health and hygiene. His patrons consult him, too, on scientific and technical problems, and on personal matters far removed from pharmacy. As a personal, as well as a professional adviser, the pharmacist is a significant, but I am afraid, sometimes undervalued, social force in modern life.

He is an indispensable member of America's great medical service team. Joining with the physician, the surgeon, the dentist, the nurse, and other workers in the health field, he helps to provide an interlocking community service that is the envy of all the world. The members of the curative professions with whom he works most closely trust the pharmacist, and value his judgment, and appreciate the importance of the work he does.

The high regard of his associates in the related professions, and the richly deserved public confidence and good will he enjoys, constitute one of the greatest strengths of modern pharmacy.

Historical Development

American pharmacy is not native. It is derivative. It is derivative historically in that its roots lie embedded in the many foreign countries that contributed to Colonial pharmacy. For centuries, the pharmacy of the Old World was far in advance of that in America, and we drew upon it freely. As this country developed, our pharmaceutical self-reliance steadily increased. We needed less and less help from abroad. Eventually, we achieved complete independence. America became a drug supplier to the whole world. We are aware that we have not yet reached the apex of professional achievement, but we can, if we care to stand alone. We are beginning to realize increasingly, however, that for their benefit as well as for our own, we should establish and maintain close contacts with the pharmacists of all the free nations of the world.

America is now permanently involved in world affairs. Americans have become world-minded, and rightly so. Other nations look to us for the leadership we are glad to give.

We applaud pharmacy's steadily developing international outlook. We welcome to our schools foreign students and teachers. We interchange the results of our researches. For a number of years we have engaged in international agreements. Our Pharmacopeia is official in countries other than our own. We participated in the production of the *Pharmacopoea Internationalis* of the World Health Organization. Recently, groups of American pharmacists have journeyed to Europe and to Asia and South America, and to the other countries of our own continent. Last year, in Philadelphia, pharmacists from a score of foreign countries participated in the Centennial Celebration of the AMERICAN PHARMACEUTICAL ASSOCIATION.

The wheel is coming full turn. In 1753, we were recipients only. In 1953, it is our privilege to give as well as to receive. *We gain strength in the giving.*

Pharmacy, today, is highly developed. But we shall never know when or where or how pharmacy began. Its origin lies veiled in the mists of antiquity. Probably, in the beginning it was a home art. Later, it was practiced in the temple. Written records reveal that the art of the apothecary was surprisingly well developed in ancient Egypt and Assyria. Always linked to medicine, pharmacy advanced in Greece and Rome, and more rapidly during the Arabian period. By the Middle Centuries it had freed itself from a frustrating domination by medicine, and it was able to emerge and eventually to sustain itself as a separate calling.

Through the long centuries, pharmacy has continued to prosper despite the disruptions of war and the vicissitudes of peace. It has survived economic and political and social revolutions. Scientific and technological advances have assisted, rather than impeded, its progress. It continues to advance at a fast pace. Its long life and its sturdy endurance certify to pharmacy's essentiality, and to its fundamental soundness.

Progress in Medicine and Pharmacy

When there was still a simple agrarian society, only plant drugs found any considerable acceptance. Chance or caprice often dictated their use. The rational scientific medicine of today was far in the future. Inorganic chemicals were first introduced, and then, at the turn of the present century, we began to use organic medicinals freely. As chemical medicines demonstrated their value, the use of berries and barks and leaves and roots, and preparations made from them, declined. Botanicals were subordinated but by no means obliterated. The trend away from plant medicines, however, continues.

A half century ago medicine changed its emphasis from cure to prevention. The search for spe-

cifics was intensified. During many years, great numbers of synthetic medicinals were tested. Later, we entered a biological era of serums and antitoxins and vaccines. More recently, came the introduction of the vitamins and hormones, the sulfa drugs, the antihistaminics, and the enzymes, and the antibiotics. The study of medicinal radioisotopes is now well under way. Our newest concern is geriatric medicine, the developing of methods and materials for treating the degenerative diseases of the aged.

All these changes and advances have been initiated, not by pharmacy, but by medicine. Medicine leads. It always must lead. Diagnosis must precede treatment. But we are proud of how well pharmacy has kept pace, step by step, with its sister profession in all its amazing progress.

New medicinal agents and new methods of treatment demanded of pharmacy, new understandings, new adjustments, new procedures, and new forms for administering medicines. Pharmacy responded well. We would expect it to, for *one of the strengths of pharmacy is its willingness to face its problems as they arise.*

Pharmacy made the new drugs pleasant and easy to take. It hurried to devise improved tablets and capsules and ampuls and other forms of medication. Just now, the needle is in fashion. More and more drugs are administered by injection, a practice that affects markedly the kind of work now being performed in the prescription room.

It is feasible to carry on only minor sterilizing procedures in the ordinary drug store. Necessarily, then, most injectibles are prepared by the large drug manufacturers. So are the thousands of pills and capsules and tablets, and other types of unit-dose medication that America uses in such stupendous quantities. These require little preparation and handling by the pharmacist. As a result, increasingly he becomes more and more a distributor of medicines, and less and less a compounder. This is the 20th century's most revolutionary change in pharmaceutical practice.

The art of the pharmacist, while still important, becomes less used and less useful. Some of his once admired technical skills begin to show touches of rust. The manual labor of the prescription desk is lightened, but the pharmacist's responsibility in the handling of thousands of medicines, instead of hundreds, is greatly increased. He is now a head worker rather than a hand worker. The time he once employed in the preparation of medicines he now devotes to other professional duties.

Despite such changes and modifications, pharmacy is still the quadrate calling it long has been —art, science, business, and profession. Some 105,000 trained and licensed pharmacists practice their profession in 62,000 drugstores and pharmacies, hospitals, manufacturing plants, research institutes, and colleges and universities. They dispense more than 400,000,000 prescriptions annually, and the number increases each year. Some 20,000,000 people a day visit the drugstores of America to seek the pharmacist's advice, to obtain medicines, and to purchase health supplies and the personal needs and conveniences that many pharmacists offer as a community service. The cash register rings up sales of four and three-quarters billions of dollars annually.

To satisfy a very real demand for nonpharmaceuticals, and to increase their incomes as well, many pharmacists have become a kind of hybrid pharmacist-merchant. In their stores business and profession meet. There need be no incompatibility between the two. There is no reason why a conscientious pharmacist shall not also be a competent business man. But the business of pharmacy can be, and sometimes is, over-emphasized to the detriment of the professional.

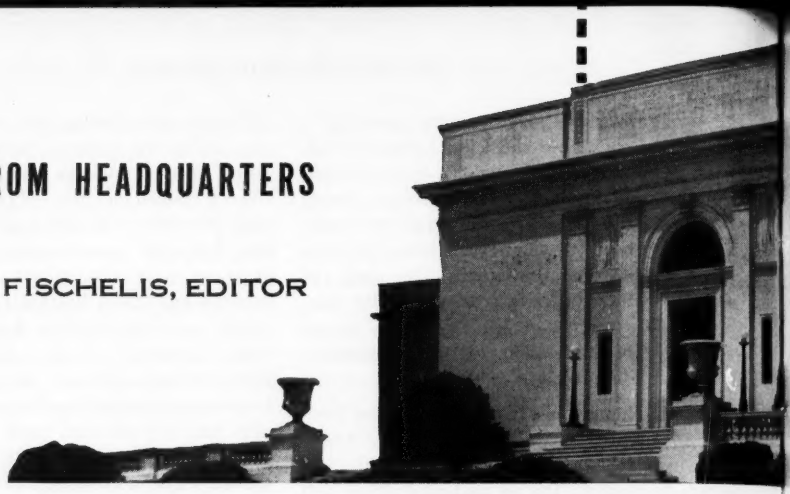
In well-conducted professional and semiprofessional pharmacies, there is a proper fusion of business and profession, not a dichotomy. In localities where the demand for professional service is small, the commercial subsidizes the professional, and the public benefits. The many thousands of pharmacists who achieve a suitable balance between business and profession are the backbone of pharmacy. *They give our profession great strength.* We are proud of them. Pharmacy is willing to be judged by them as well as by other strictly professional pharmacists who approach more closely the ideal. Such pharmacists supply nothing but prescription service and sickroom needs. They give dignity and prestige to their calling. They increase steadily in numbers, importance, and influence.

Specialists in hospital pharmacy form another group in which we take great pride. These men and women practice their profession in its purest form since in their service the profit motive does not enter.

Two additional chapters of Dean Muldoon's Remington Medal Address will be printed in THIS JOURNAL. The February issue will carry the chapter relating to pharmaceutical industry, education, and specialization.

STRAIGHT FROM HEADQUARTERS

ROBERT P. FISCHELIS, EDITOR



Constructive Action in 1954

IN THE December, 1953, issue of THIS JOURNAL (page 758) we called attention to matters affecting all phases of pharmacy and the health professions in general and we asked whether this may not be the right moment for constructive action in behalf of all concerned.

Since then notice has been given that initial steps have been taken by representatives of a number of drug manufacturing firms to organize the National Pharmaceutical Council, Inc.

The purposes of this council are declared to be as follows: (*a*) To benefit public interest by promoting the highest professional standards in the manufacture, distribution, and dispensing of prescription medication and other pharmaceutical products.

(*b*) To benefit the pharmaceutical industry by promoting public relations programs on behalf of pharmacists and others in the industry.

(*c*) To promote the interests of the public, physicians, pharmacists, and others in the pharmaceutical industry by encouraging the highest standards of ethics and integrity in the manufacture, distribution, and dispensing of prescription medication and other pharmaceutical products.

(*d*) To collect and disseminate information concerning laws, regulations, and governmental agencies dealing with the manufacture, distribution, and dispensing of prescription medication and other pharmaceutical products as a contribution to the better understanding thereof in the public interest.

The president of the newly formed council, Dr. Theodore Klumpp, recently addressed the Drug, Chemical and Allied Trades Section of the New York Board of Trade. Under the title "E Pluribus Unum" he referred, among other matters, to "substitution," as a threat to all levels of pharmacy and indicated that this practice is growing rather than waning.

The laws of fair competition prized so highly by the drug industry are built around brand names, Dr. Klumpp said, adding that "the brand name gives fair trade its legal basis. To wipe out the brand name structure by substituting generic names is to wipe out the great protection against unfair competition which the retail druggist has worked so hard, for so long, to develop."

Dr. Klumpp cited "duplication" as a second serious industry problem. To meet this problem, he said, drug manufacturers have undertaken what no other industry known to him has done, namely to guarantee the sales of products by taking back for full credit any unsold items.

"In addition," said Dr. Klumpp, "we have undertaken the major effort and expense of moving our brands through detailing, advertising, sampling, direct mail, and exhibits.

"At the same time, manufacturers are beginning to find out that duplicate products have a high mortality rate and don't often pay off."

Proposals to vest in the pharmacist the right to apply the generic name theory in

compounding prescriptions "have not been fully thought through," Dr. Klumpp continued. "To adopt such a proposal through legislative enactment would kill Fair Trade Laws, pave the way for grade labeling, which I consider foreign to a free enterprise economy, and would ultimately turn over more and more of the control and operation of the pharmaceutical industry to the Government."

These are arguments on a major problem which cannot be ignored and it seems clear that the National Pharmaceutical Council intends to present and elaborate them forcefully with the backing of industry funds.

We have been delving into the literature and the records of American pharmacy, going back three-quarters of a century or more, to try to find out to what extent this problem has been solved by group action in the past and the record shows endless discussion without much in the way of accomplishment.

Invariably the discussions end and the resolutions begin by pointing out the ethical considerations involved. Then there is groping for some tangible procedure to reach offenders and make them see the light.

But there are many factors involved in this problem as it has developed over the years. Not the least of these is the much more complete education of the pharmacist, and the very logical demand that this education should be put to maximum use. Obviously a well-trained pharmacist who knows his pharmaceutical chemistry and his pharmacology and is in daily touch with physicians and dentists, who want him to be their source of information on drugs, plays a major part in the selection of brands of medicaments.

He has a grave responsibility, first, in keeping well informed and having authentic sources of information at his command, and second, in transmitting this information in an unbiased and truthful manner.

These are professional responsibilities that are just as important in their domain as are the responsibilities of the physicians and dentists who prescribe and use the drugs. The ability to impart professional information that is accurate, inclusive, and fair is what makes today's pharmacist such an important member of the healing arts team.

No one can study this situation without coming to the conclusion that professional and interprofessional ethics rather than laws furnish the answer to the determination of what professional men and women shall do with their professional knowledge and information.

Recognition of this and other problems surrounding the delivery of adequate medical care is the basis for the interprofessional conference which the AMERICAN PHARMACEUTICAL ASSOCIATION is holding on February 4 in Washington. This conference will be participated in by representatives of medicine, dentistry, nursing, hospitals, pharmacy, and public health. It is the first step toward more adequate recognition of the problems which modern medical care imposes upon the professions in their relations with each other. Out of it may come some new or more effective approaches to these problems. We do not expect miracles.

It is clear that the drug industry alone, cannot hope to correct the so-called substitution evil without the complete cooperation of the professions supplying medical care.

We venture to hope that when the professions and the industry together consider this problem, in all of its phases, some form of cooperative effort will emerge which will recognize the part each group must play for the welfare of all and especially for those who are ill.

Officers for 1954-55

OFFICERS of the AMERICAN PHARMACEUTICAL ASSOCIATION are elected by a mail ballot participated in by all members in good standing. The ballots are counted by a Board of Canvassers appointed by the President, and the results are certified to the Secretary in due course. The Board of Canvassers, consisting of J. Lester Hayman, chairman, William J. Dixon, and Harry C. Zeisig, met on January 8 and 9, 1954, in Washington to count the votes cast in the election of officers to be installed at the 1954 Convention.

The following officers were elected and will be installed on August 27 during the Annual convention in Boston, Mass., which will be held August 22 to 27, 1954.

President-Elect—Newell W. Stewart, of Phoenix, Arizona, practicing pharmacist and secretary of the Arizona Board of Pharmacy and the Arizona Pharmaceutical Association.

(Continued on next page)

Straight from Headquarters

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First Vice-President-Elect—John B. Heinz, of Salt Lake City, Utah, practicing pharmacist.

Second Vice-President-Elect—Ronald V. Robertson, of Spokane, Washington, practicing pharmacist.

Members-Elect of the Council for a term of three years—George D. Beal of Pittsburgh, Pa., Research Director, Mellon Institute; Glenn L. Jenkins, of Lafayette, Ind., dean, School of Pharmacy, Purdue University; Ernest Little, of Newark, N. J., Rutgers University, College of Pharmacy.

The present officers of the AMERICAN PHARMACEUTICAL ASSOCIATION, who will continue to function through the Boston Convention are:

President—F. Royce Franzoni, Washington, D. C.

First Vice-President—John A. MacCartney, Detroit, Mich.

Second Vice-President—Joseph B. Sprowls, Philadelphia.

The honorary president, the secretary, and the treasurer are elected at the convention by the House of Delegates.

You'll Like Boston

ARRANGEMENTS are under way to make the 101st Meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION and affiliated and related organizations one of the most memorable in the long history of the A.PH.A.

The convention will be held in Boston, the week of August 22, 1954, and the Statler Hotel will be Headquarters.

Already there are committees at work in the convention city, planning for the entertainment and comfort of the many members of the A.PH.A. and related groups who expect to attend this meeting. Boston has a 300-year-old tradition of hospitality and provides much in the way of historic interest.

Whether travel to the convention city is undertaken by rail, or automobile, or plane, the opportunity is provided to relive exciting American history at places like the Old North Church and Bunker Hill or nearby Plymouth, Lexington, and Concord.

It was in the tower of the Old North Church (shown on our front cover), built in 1723, that the lanterns were hung to signal Paul Revere that the British were marching to Lexington and Concord. Now standing in the midst of the hustle and bustle of a large city and surrounded by taller business buildings, this landmark is visited by thousands of tourists annually and continues as a reminder that eternal vigilance is the price of liberty.

Two meetings of those who will constitute the nucleus of the Convention Committee have been held with the A.PH.A. Secretary and the following tentative committee selections have been made: Co-chairmen of the General Convention Committee will be Martin E. Adamo, A.PH.A. council member and president of the New England College of Pharmacy, and Samuel Best, president of the Massachusetts College of Pharmacy. Samuel Silverman, secretary of the Massachusetts Pharmaceutical Association, will act as secretary of the committee. O. L. Rafuse of McKesson and Robbins, and Edward A. Loring, of Gilman Bros., will serve as co-chairmen of the Finance Committee and John Cusick, secretary of the Massachusetts Board of Pharmacy, will be the chairman of the Entertainment Committee. Publicity will be handled under the chairmanship of Leavitt C. Parsons, publisher of "The Apothecary." The Hospital Pharmacists' Committee will be headed by Mrs. Ethel T. Pierce, of the South Shore Hospital, South Weymouth, Mass., and educational activities will have the attention of Deans Howard C. Newton of the Massachusetts College of Pharmacy and Constantine Meriano of the New England College of Pharmacy. The interests of boards of pharmacy are in the hands of Timothy S. Shea, president of the Massachusetts Board of Pharmacy. All of these active workers will have strong committees of associates and they are working diligently in completing their preliminary plans.

The February issue of THIS JOURNAL, both Scientific Edition and Practical Pharmacy Edition, will contain a hotel reservation form which may be used to apply to the A.PH.A. Housing Bureau for reservations.

It is expected that the Statler Hotel will be able to accommodate all who wish to be located at the headquarters hotel.

A direct mail announcement and hotel reservation form will be sent to every active member of the ASSOCIATION in due course.

Plan your summer vacation in 1954 with the A.PH.A. convention in Boston as your major objective.

Pharmacists in Military Service

Pharmacists and pharmacy students who are in the draft age may expect to be inducted for the customary period of military duty unless they have been deferred by their respective draft boards for one or more of the customary reasons for such deferral. In the case of graduates and licensed pharmacists who hold key positions which have caused their deferment because of the national health, safety, or interest, military service may be required at any time after the specific cause for the deferral ceases to exist. In the case of students of pharmacy, deferrals will be discontinued when the student is no longer keeping step with the progress of his classes or when he has completed one or more years of the college course without arrangements for continued deferral.

Pharmacists interested in military careers in pharmacy may apply for commissions in the Medical Service Corps of the Army, Navy, or Air Force. Applications may also be made for commissions in the Reserve of these Medical Service Corps. For direct information as to availability of such commissions and the procedure to be followed in obtaining them, address one or more of the following officers: Col. Bernard Aabel, Office of the Surgeon General, Personnel Division, Department of the Army, Washington 25, D. C.; Lt. Comdr. K. E. Bechtloff, M.S.C., U.S.N., head, Pharmacy Section, Medicine Branch, Professional Division, Bureau of Medicine & Surgery, Department of the Navy, Washington 25, D.C.; Lt. Col. Elliott P. Rigsby, chairman, Armed Services Medical Materiel Standardization Committee, Department of the Air Force, Washington 25, D. C.

Federal Contributions to State Civil Defense

Total Federal contributions to match the expenditures of the states, territories, and possessions for approved civil defense purposes amounted to $35,792,318 through June 30, 1953. Since these Federal contributions are equally matched by the states, territories, and possessions (with the exception of Alaska) the total Federal and state civil defense matching funds obligated or approved at the end of the last fiscal year aggregated $71,349,400. (For Alaska the matching ratio is 70 per cent by the Federal Government and 30 per cent by the Territory.) The purpose of the matching funds program, authorized by the Civil Defense Act of 1950, is to help the states to equip and maintain a balanced civil defense, not only to protect lives and property in their own target areas but also to provide mobile support to other states in case of need.

VA Tuberculosis Survey

For the past four years, the Veterans Administration has conducted the most extensive war on tuberculosis among veterans ever known in the history of the country.

During this period, the VA has screened 3,217,000 persons for tuberculosis. These include 2,513,000 patients and 704,000 employees. Among these two groups, 12,740 cases of active pulmonary (lung) and 34,470 cases of inactive pulmonary tuberculosis were discovered.

The results, it is reported, will not only reduce the incidence of tuberculosis infection among veterans and their families, but also should reduce the number of tuberculosis cases and deaths among the general population.

Sulfa for Defense

The Civil Defense stockpile of strategic medicinals now includes 185 million sulfadiazine tablets. Sulfadiazine, the drug of choice in meningococcic meningitis, is also valuable in the treatment of pneumonia and other infections of the respiratory tract, in urinary tract infections, in preventing rheumatic fever in susceptible persons, and in a variety of other infections.

New Ointment Bases

VERSATILE AND EASILY COMPOUNDED

To Enable The Pharmacist to Aid the Physician to Help the Patient

A group of reports on recent investigations on ointment base formulations.

Dermatologists seek effective dosage forms for topical applications of drugs in the treatment of skin infections and dermatoses that require special therapy.

Pharmacists can offer their professional assistance in the formulation of easily applied and efficacious products that are not messy and are removable from irritated areas with minimum discomfort to the patient.

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A FEW *Dermatologic* BASES

by **P. L. Burrin***

DERMATOLOGIC prescriptions are an exclusive field for the professional pharmacist whose contact with this subject is through the doctor who is treating skin diseases.

The modern physician treats dermatologic conditions in a variety of ways, giving direct emphasis to the possibilities of known and unknown allergies. In many cases which do not respond readily, a different prescription may be issued at each office visit. This results in the doctor prescribing a variety of ingredients in a large variety of vehicles. Sulzberger (1) recently stated that patients going to a skin specialist require tailor-made prescriptions containing many different ingredients to reduce side effects and sensitivity. This large variety of prescriptions is the most desirable situation for the professional pharmacists. It would appear to remain a professional item because each prescription is individually written for the patient, and there is very little need for stock dermatologic preparations. As a result, very few products of this category are marketed by the pharmaceutical manufacturers.

Pharmacist-Physician Cooperation—We believe dermatologists would welcome professional suggestions from their pharmacist and that the offering of a variety of type prescriptions for the doctors' consideration could be a worth-while promotion entrée for the professional pharmacist.

The modern practice of medicine involving dermatologic medication will cover a variety of preparations which are designed primarily for the treatment of diseases of the skin. Such prescriptions may be grouped in the following broad pharmaceutical classifications: ointments, suspensions, emulsions, solutions, and dusting powders.

To illustrate the thought and effort given to the details of this subject, Sulzberger (2) has

Presented before the Section on Practical Pharmacy, A.PH.A. Convention, Salt Lake City, Utah, August, 1953.

* Head, Formula Control Department, Eli Lilly and Company, Indianapolis 6, Ind.

recommended a prescription intended to be used by ladies who find it necessary to stop the use of the usual cosmetic covering bases such as cake make-up. The basic formula can be used as a flesh-colored lotion and combined in varied proportions to produce the required colored base. It is as follows:

Iron oxide and bentonite (Neutracolor Almay)	1.5 to 3.0
Zinc oxide	10
Calamine	10
Talc	10
Glycerin	10
Alcohol	40
Water, distilled	40

The average variations in complexions can be matched by varying the amounts of Neutracolor and substituting neocalamine in varying amounts for the calamine. This base may be used for preparing a lotion containing quantities of other medicinal solids from one to twenty per cent. Such a prescription has high cosmetic value and no doubt would prove interesting and useful to many practicing dermatologists.[1]

Types of Ointment Bases.—Let us turn our attention to the group which we have broadly classified as ointments and review the bases which might be applicable to such prescriptions. These may be described as semisolid preparations for external application. If one is to consider further the various types of dermatologic preparations which can be broadly included as ointments, they can be classified, from one viewpoint, according to their physical application and properties. By such a subdivision of the group, one can then describe them so that it is possible to arrive at one's own understanding when such prescriptions are discussed.

A vanishing cream base may be considered an emulsion type containing a high percentage of water. It is like a cosmetic preparation and may be rubbed into the skin leaving no greasy surface. It mixes well with aqueous portions and also may be easily removed by washing with water.

The washable ointment base may be considered one that can be removed from the skin readily by washing with water. It does not have the property of being completely rubbed into the skin. Hydrophilic Ointment U. S. P. would be an example of this type.

Water-absorbable bases may be described as those that are compatible with large quantities of water or ones which appear to absorb it as a water-in-oil phase. Lanolin, anhydrous, is a product of this type, and Hydrophilic Petrolatum U. S. P. also meets this classification.

Polyethylene Glycol Ointment U. S. P. is an example of a water-soluble base.

Oleaginous bases may be described as those composed of waxes and grease-like constituents which do not absorb moisture well and are not capable of being rubbed into the skin so that they will disappear; and, as a result, they leave a greasy surface. Petrolatum and Simple Ointment U. S. P. are examples of this type of base.

Dermatologic pastes are ointment-like mixtures containing a higher percentage of powders than the usual ointments.

One of the questions concerning creams and ointments which has long been discussed professionally is the desirability for, and the rate of, absorption from such bases. Peck (3) recently stated: "In many instances, while we point our formulations for special purposes to enhance absorption, as far as the cosmetic industry is concerned, we often wish to have our active principles in our cosmetics act *in situ* rather than undergo absorption and exert a systemic effect. It has been pointed out by Rothman and others that electrolytes do not penetrate the *stratum lucidum* and are generally not permeable through the intact skin. The openings of the skin glands offer passage for substances to contact the cells lining the walls of the glands. Thus they may eventually penetrate through the walls into surrounding cutis and thence to the general circulation. The pores of the glands are filled with air and fatty material, and it is difficult for water-soluble substances to penetrate unless there is incorporated into the vehicle substances which permit them to mix with and eventually displace the contents of the gland openings, as well as the contents of the glands themselves. It is well known that the inflammatory lesions of the skin cause the normal barriers of the skin to electrolytes to be broken because of the primary damage to the epidermis."

(Continued on next page)

[1] [*Editor's note:* Formulas for calamine lotion and neocalamine lotion that could be blended to match patients' skin shades were developed in the A.PH.A. Laboratory See THIS JOURNAL, **13,** 250(April, 1952).]

Ointment Bases

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A great deal of work has been done by a number of observers relative to the role of various bases in absorption through the skin. When Perlman devised his test for identification of small quantities of pyribenzamine, it was thought that it would be worth while to use this test to re-evaluate the role of ointment bases in absorption through normal and damaged skins. By means of this test, one could demonstrate in the urine the absorption from an ointment containing pyribenzamine as much as one or two micrograms of this substance. Peck experimented with cream, ointment, carbowax base, and vanishing cream base with concentrations of 2–5–10 per cent pryibenzamine hydrochloride as well as pyribenzamine base. The so-called cream base used was that which we have called a washable or hydrophilic ointment base. The ointment base used contained cholesterol, stearyl alcohol, white wax, anhydrous lanolin, white petrolatum, and distilled water, which is a modification of Hydrophilic Ointment U. S. P. The water-soluble base consisted of carbowax or polyethylene glycol containing a mixture of polyethylene glycol 400, polyethylene glycol 1500W, and polyethylene glycol 4000W. The vanishing cream base was prepared from stearic acid, sodium lauryl sulfate, Tween 60, Arlacel 60, Arlex, and distilled water.

Peck reports the absorption of pyribenzamine hydrochloride from these bases was best from the vanishing cream type, next best from the hydrophilic petrolatum type, and poorest from the water-soluble base exemplified by the carbowax mixture. The water-insoluble pyribenzamine base was best absorbed from fatty vehicles after inunction to a normal skin. Here, too, the greater the concentration of the drug and the longer the period of inunction, the greater the absorption. However, the pyribenzamine base was better absorbed than the pyribenzamine hydrochloride. Apparently, it is the property of being lipoid-soluble that is more important to absorption than the vehicle itself.

Ointment Base Formulations

In further discussing formulas which might be used for dermatologic ointment prescriptions, one now has available a variety of ideas based on various concepts of what is desirable in the base. The discovery and production of polyethylene glycol has lead to a variety of new products in this series. The number of these is so great that a simplified means of identification has been used in which the number following the name indicates the molecular weight of the compound. The "W" which sometimes follows this number indicates white as a description of color. The lower molecular weight compounds are liquid. Those having a molecular weight above 1000 are solid and have some of the physical properties of wax. These solid polyethylene glycols are known in the trade as Carbowaxes, and are water-soluble substances. They may be combined in various proportions with the liquid polyethylene glycols to provide a water-soluble base. Polyethylene Glycol Ointment U. S. P. is an example of such a formulation.

The vanishing cream type base may be exemplified by the following formula:

Vanishing Cream Type Base

Stearic acid	24
Cetyl alcohol	1
Triethanolamine	2
Diethylene glycol monoethyl ether (Carbitol)	20
Water, distilled	53

Such bases are quite desirable from a cosmetic viewpoint, also because water-soluble ingredients can be incorporated in them forming a prescription which can be rubbed on the surface of the skin and with continued rubbing will disappear. If insoluble powders are incorporated in such a base, the only residue would be that of the incorporated powder. Such bases have the disadvantage of not being permanently stable. The formula contains a large percentage of water which is lost quite readily by evaporation on storage. However, extemporaneous prescriptions, which are always used promptly, can be dispensed using such a base.

The washable ointment base is exemplified by Hydrophilic Ointment U. S. P. This type of prescription base has a wide variety of compatibility as well as therapeutic efficacy. It exhibits more body and has more the feel of the ointment than the vanishing cream base. The presence of petrolatum in this formula does not impart the characteristic of the greasy base and also aids in maintaining a suitable consistency. Propylene glycol acts as a humectant and prevents the product from drying out as readily as the usual vanishing cream.

A modification of this formula has been found to be somewhat better in texture and also provides a product with slightly less petrolatum. At the same time, it contains more humectant and water than the official formula. The U. S. P. and the modified formulas are:

Washable Ointment Base

	U. S. P. Formula	Modified Formula
Sodium lauryl sulfate	1	1
Stearyl alcohol	25	25
White petrolatum	25	20
Glycerin	...	15
Propylene glycol	12	...
Methylparaben	0.025	0.025
Propylparaben	0.015	0.015
Water, distilled	37	39

Upon aging samples of this product, it would appear glycerin is slightly more advantageous than pyropylene glycol in preventing the base from drying out, but it is said by some to be more dehydrating to the skin. This advantage is only slight, and propylene glycol could be used satisfactorily. This product can be stored in the usual ointment-dispensing jars for at least one year without sufficient loss of moisture to be detected in the quality or consistency of the product.

Water-absorbable bases are highly desirable where the prescription bases containing water are unsatisfactory. Aquafor and Hydrophilic Petrolatum U. S. P. are products of this type.

The U. S. P. formula and a very satisfactory modification of it are:

Water-Absorbable Base

	U. S. P. Formula	Modified Formula
Stearyl alcohol	3	3
Cholesterol	3	1
White wax	8	8
Anhydrous lanolin	..	15
White petrolatum	86	73

This product can be prepared very light in color if the colors of the ingredients are controlled. Cosmetic grade lanolin can be obtained in the trade and it is lighter in color than the commercial anhydrous lanolin. Such ointment bases have a high degree of pharmaceutical compatibility, and can absorb large proportions of water.

The oleaginous base formulas are the oldest from the point of use and are exemplified by such formulas as Simple Ointment U. S. P. These bases do not mix well with water, and it is very difficult even to incorporate small quantities of solutions into them. Upon application, they leave a completely greasy surface.

In addition to the above group, we also have the dermatologic pastes which have been carried in the official compendia for a number of years. These are used quite extensively in some localities. Zinc Oxide Paste U. S. P. is typical and contains zinc oxide, starch, and petrolatum. This formula has certain peculiarities which seem to be imparted to it by the kind of petrolatum used. It has been found that when the paste is prepared from petrolatum made from Pennsylvania crude oil it can be melted with the aid of gentle heat so that other ingredients can be readily incorporated. When cool, it will return to its original consistency. The same formula prepared from petrolatums originating from other crude oil tends to produce a semisolid mass resembling cottage cheese. This is not a function of cooked starch because the phenomenon occurs at a temperature too low to cause rupture of the starch grains.

There are certain other recent developments which are quite interesting. Sperandio (4) developed a powdered ointment base which has certain advantages. The powdered material can be stored at room temperature without apparent deterioration and can be reduced to ointment consistency by adding water in the proportion of 60 Gm. of powder to 40 Gm. of water. Longer shelf life may be added to this reconstituted preparation if 4 per cent glycerin or propylene glycol is used to replace an equal quantity of the water. The base thus prepared is said to be compatible with practically all commonly used dermatologic medicines.

Silicones in Ointment.—Recent research has developed a new group of chemical compounds called silicones which have the property of repelling water. Only recently work has been done on incorporating silicones, such as dimethylpolysiloxanes, in ointment bases. Such ointments, when applied to the skin, produce a moisture repellent area. It is too early in the development to determine all the applications such a product might have.

We believe, that with these few basic formulas the professional pharmacist could give

(Continued on next page)

Ointment Bases

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welcome assistance to his local physican who may be treating ailments of the skin. Sensitivity reactions may require several modifications of the prescription for the same case. From these facts, it would seem the professional pharmacist has a good opportunity to expand a line of prescriptions which appears to be completely and exclusively in his field of operation. It furthermore would offer a fine opportunity to develop stronger bonds with his physicians by offering them collaborative pharmaceutical assistance in formulations used in the practice of determatology.

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WASHABLE *Absorption* BASES

by Harvey Newman*
O. H. Miller†

OF THE several types of ointment bases the "absorption bases" have several important advantages. Aqueous solutions as well as oil-soluble substances can be readily incorporated, absorption of drugs is usually greater than in other bases, they are quite stable and do not dry out on exposure to air, and they are compatible with most substances. The official hydrophilic petrolatum and a number of proprietary absorption bases such as Aquaphor, Polysorb, and Hydrosorb are widely used. The principal limitation on their use is their nonwashability which makes their removal difficult. Readily washable bases of the o/w or soluble type have become quite popular because they can be easily removed with water. In addition to the official hydrophilic ointment and polyethylene glycol ointment there are several popular proprietaries such as Neobase, Unibase, Dermabase, and Velvachol. Also a large portion of the medicated ointments on the market are of the washable type. The o/w emulsion bases and gels in this group are generally unstable in that they readily lose water by evaporation and are adversely affected by freezing.

Except for lack of washability, the absorption bases most nearly approach the ideal ointment base as described by Beeler (1). The most pertinent requirements for the ideal base are that it be stable, neutral, nonirritating, compatible with all medication, removable by washing with water, capable of holding at least 50 per cent of water, and permit ready incorporation of either oil-or water-soluble substances.

Surface-Active Agents in Ointment Bases.—The water absorbing properties of the absorption bases are due to formation of a water-in-oil emulsion with the aid of relatively hydrophobic surface-active agents or surfactants. The washability of the washable bases is due to formation of oil-in-water emulsions with the aid of hydrophilic surfactants. A washable absorption base would require first the formation of a water-in-oil emulsion and then as more water is added, a phase reversal so as to form an oil-in-water emulsion. To meet the requirements for the ideal base this phase reversal should not occur until at least 50 per cent of its weight in water has been added. This can be accomplished by use of surfactants intermediate in their hydrophobic and hydrophilic characteristics or by proper combinations of hydrophobic and hydrophilic surfactants.

The selection of surfactants for use in ointment bases of all types should be based on their relative freedom from irritation and incompatibilities. Dodd, Hartmann, and Ward, in 1946 (2), clearly demonstrated the superiority of the nonionic surfactants over the anionic and cationic types in regard to freedom from irritation when used in ointment bases. Even when applied in high concentration there was no observable irritation of human skin and little or no effect on the process of wound repair in rabbits. There have been numerous additional reports showing a wide variety of nonionic surfactants to be free of irritating

Presented before the Section on Practical Pharmacy, A.PH.A. Convention, Salt Lake City, Utah, August, 1953.

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properties even at 100 per cent concentration while the anionics and cationics have been shown to be irritating and sometimes sensitizing at quite low concentrations. Miller (3) has shown a high incidence of incompatibility when ionic surfactants are combined with medicaments of opposite ionic type, leading to precipitation and probably often deactivation. Such ionic reactions can be avoided by use of nonionic surfactants. The problem in selecting nonionic surfactants is not one of making the best use of limited materials, but rather in deciding where to begin in utilizing a wide selection of likely substances. This freedom from irritation, low incidence of incompatibility, and wide choice of materials among the nonionics precludes consideration of any ionic surfactant in formulation of "ideal" ointment bases. A word of caution is in order regarding certain nonionics which contain appreciable quantities of ionic impurities. For example "self-emulsifying" glyceryl monostearate usually contains a small amount of soap or other ionic surfactant.

A number of nonionics, such as the official polyethyleue glycol 400 monostearate, are ointment-like in consistency and can be used alone or with slight modification. Water can often be added in considerable quantity without loss of ointment consistency through formation of w/o or o/w emulsions or gels. However, much better control of desired properties can be expected by combining nonionic surfactants with the many other nonionic materials used in ointment formulation.

Water Absorption Properties.—A number of formulas have been proposed utilizing nonionic surfactants in low concentrations, usually 5 to 10 per cent, to increase the water number or water absorption of w/o absorption bases. The proprietary base Polysorb is of this type. These bases will readily absorb several times their own weight of water without loss of ointment consistency, but are far from washable. By substantially increasing the concentration of surfactant these bases may be made washable.

Experimental

In determining water absorption of the experimental bases that follow, no heat was applied to melt the bases. Water was incorporated into the bases on an ointment slab using a spatula, until either a phase reversal occurred as indicated by spreading of a droplet of an aqueous dye solution, or the ointment became too soft or the base would no longer readily take up water. It was felt this procedure most nearly duplicated actual prescription practice. Lower water absorption values were obtained with several common absorption bases using this test than when using the recommended procedure of adding water to the melted base. Heat was used only in preparing the anhydrous bases themselves. The ingredients were heated until melted then stirred until cool.

Very simple absorption bases can be prepared using high concentrations of nonionic surfactants. The following formula was found to be very satisfactory and readily washable, particularly when partially hydrated:

Sorbitan monopalmitate (Span 40)....50
Sorbitan trioleate (Span 85).....50

(Water absorption 150%)

The hydrophobic but water-dispersible sorbitan trioleate was utilized as the oil phase in combination with the more hydrophilic sorbitan monopalmitate to give a more rapid phase reversal and better washability. Combinations of sorbitan monopalmitate with oils such as peanut oil and liquid petrolatum were freely washable and absorbed water readily, but were prone to separate on standing.

Absorption bases now being used can be made washable by addition of suitable nonionic surfactants. The following formulas were all found to be satisfactory:

Hydrophilic Petrolaum U. S. P.....50
Polyoxyethylene sorbitan monostearate (Tween 60).....50

(Water absorption 50%)

Hydrophilic Petrolatum U. S. P.....50
Sorbitan monopalmitate (Span 40)....50

(Water absorption 150%)

Aquaphor.....50
Polyoxyethylene sorbitan monostearate (Tween 60).....50

(Water absorption 80%)

Using the same water absorption test, hydrophilic petrolatum absorbed 60 per cent water while Aquaphor absorbed approximately 400 per cent. Additional formulas of this type were prepared, but often these were too firm. To avoid this difficulty the petrolatum in

(Continued on next page)

Ointment Bases

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hydrophilic petrolatum was replaced with liquid petrolatum. The following formula is an example.

Liquid petrolatum	43
Cholesterol	1.5
Stearyl alcohol	1.5
White wax	4
Sorbitan monopalmitate (Span 40)	50

(Water absorption 100%)

All the bases containing petrolatum or liquid petrolatum were slowly washable until hydrated and tended to leave a slight residual oiliness. In order to improve the washability several bases were prepared in which the petrolatum was replaced entirely with the surfactants. The following formulas are typical.

Cholesterol	3
Polyoxyethylene sorbitan monostearate (Tween 60)	80
Stearyl alcohol	5
White Wax	12

(Water absorption 50%)

Cholesterol	3
Polyoxyethylene sorbitan monooleate (Tween 80)	40
Sorbitan monopalmitate (Span 40)	40
Stearyl alcohol	12
White wax	5

(Water absorption 50%)

These bases were much more rapidly washable. Consistency could be easily controlled by varying the amounts of the several ingredients. One peculiarity was noted with bases with a high Tween content. As increasing amounts of water were added the consistency would fluctuate from thick paste to semifluid several times before phase reversal occurred.

Discussion

The preceding formulas demonstrate that a variety of satisfactory washable absorption bases can be prepared. Many further modifications and improved formulas can be developed with further experimentation. Only a few nonionic surfactants of the many readily available were utilized. The Spans and Tweens[1] were used only because of the availability of rather extensive data on their solubilities and other properties.

Washable absorption bases, properly formulated, closely approach the "ideal" ointment base. They can be prepared in either anhydrous or hydrated forms. They can absorb adequate amounts of water for all likely prescription needs while maintaining suitable ointment consistency and yet are readily washable. They do not lose water readily by evaporation and are not affected by freezing. Their ability to mix readily with oil or water simplifies their use in compounding. While no data are yet available, these bases should prove excellent vehicles for drug absorption when applied to the skin. The use of nonionic surfactants in their formulation assures maximum freedom from irritation and incompatibilities. Such bases should also prove satisfactory for ophthalmic use.

[1] Manufactured by Atlas Powder Co., Wilmington, Del.; available in small lots from R. F. Revson Co., 243 W. 17th St., New York 11, N. Y., and from other small-lot dealers.

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Authors' Summary

Water absorption is accomplished by formation of w/o emulsions and washability is achieved by eventual phase reversal to o/w emulsions.

The stability, freedom from irritation and incompatibilities, washability, water absorption, ease of compounding, probability of optimum drug absorption through the skin, and ability of these bases to mix readily with either oils or water closely approach the requirements for the "ideal" ointment base.

A NEW *Washable Ointment* BASE

by R. E. Saute*
C. O. Lee†

WASHABLE ointment bases have been a topic of much pharmaceutical interest for the past two decades or more. Credit is given to the cosmetic manufacturers for extensive work which they have done to perfect these washable bases.

It has been the hope of many workers that a "universal base" could be perfected which would have a wide spectrum of compatibility with the agents commonly used by dermatological practitioners. However, the more recent accounts in the literature seem to suggest that, as yet, no such base has been found (1).

Ointments are used for topical application in the treatment of many different skin conditions. The greasy-type bases seem to be suitable for those cases in which the retention of heat is desirable but are rejected when the evaporation of perspiration and serous exudation is necessary. Many of the washable bases contain 50 per cent or more of water, much of which may be lost by evaporation before being used. The loss of water by evaporation results in a higher concentration of the medicament in the remaining ointment. This is an objection that is often raised against the water-holding bases. On the other hand the greasy bases have many undesirable properties. In view of these and other objections to both types of ointment bases, it is the purpose of this paper to present an ointment base formula which is compatible with most of the medicaments that a dermatologist might prescribe and one that can be made extemporaneously by pharmacists.

Troublesome Wool Fat and Sodium Lauryl Sulfate.—Mumford (2), Huston (3), Hadgraft (4), Presslie (5), and Johnston (6) used sodium lauryl sulfate or wool fat as constituents of their bases. Green (7) states that sodium lauryl sulfate is irritating to the skin and especially to the mucous membrane if used for prolonged periods of time. Dermatologists have also reported that many persons are allergic to wool fat. For this reason wool fat is not an ingredient in the ointments now official in the U. S. P. XIV, although it has been regarded as an important constituent in ointments and ointment bases for many decades.

Experimental

The New Base and Its Properties—Many bases were formulated, tested, and observed in an effort to find one that met all the requirements of a good base.[3] As replacements for wool fat and sodium lauryl sulfate, Spans,[1] Tweens,[1] Amerchol CAB,[2] and other surfactants and emulsifiers were tried. The nonionic (9) substances are generally nonirritating and a combination of an oil-soluble and a water-soluble surfactant tends to form more stable emulsions.

Amerchol CAB (10) was used in place of wool fat because it is less likely to cause allergic reactions and is more constant as to composition. It was found that Amerchol CAB could not be used in formulas in amounts comparable to those of lanolin.

Several bases were formulated and observed for a period of thirty days. The base which appeared to be the most suitable at the end of this time has the following formula:

Ointment Base

Amerchol CAB	20
Glyceryl monostearate	10
Cetyl alcohol	20
Spermaceti	10
Span 20	10
Tween 20	10
Glycerin	12.5
Distilled water	100
Preservatives	*q.s.*

Procedure—Fuse the Amerchol CAB, glyceryl

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[1] Atlas Powder Company, Wilmington, Del.
[2] American Cholesterol Products, Inc., Milltown, N. J.

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Ointment Bases

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monostearate, cetyl alcohol, spermaceti, and Span 20 together on a water bath at a temperature of about 60°; mix the glycerin and Tween 20 with the distilled water, containing the preservative and heat to a temperature of 60°. Pour the water phase into the wax phase and stir until the mixture is congealed.

The *p*H of this base was found to be 5.75 which is close to that of the skin (11). To test the stability of the base when made alkaline, a sufficient amount of ammonium hydroxide solution was incorporated in it to produce a *p*H of 11.6. The mixture remained unchanged for a period of three months.

Ointments of Official Products Using This Base—In order to test the compatibility of the base, 20 different chemicals were incorporated to form ointments. Satisfactory preparations were obtained with each of the medicinals except tannic acid which was incompatible with the base. On being mixed with an equal amount of methyl salicylate the base formed a good lotion which remained stable at room temperature for at least three months.

Each ointment was divided into three parts for purposes of storage and stability studies. One fraction of each ointment was stored in an oven at 34° for two months, then the temperature was raised to 37° for one month. A second fraction was placed in a refrigerator at 10° for three months and the third fraction was stored at room temperature for the same length of time. The ointments were observed each week during the three months' test period. Results of the storage tests are given in Table I. The percentage concentration of each medicinal is also indicated.

Comments

An examination of Table I shows that 19 of the 20 ointments which were subjected to storage in a refrigerator at 10° for three months remained stable; only two of them showed any instability when stored at room temperature, 25°. When stored at 34° for two months, four ointments showed some discoloration, one indicated some bleeding, and one was broken. The temperature was then increased to 37° for a third month. At the end of this time a total of six ointments showed discoloration and three were broken. Ointment of tannic acid was wholly incompatible with the base, even at refrigerator temperature. The ointments of

TABLE I.—RESULTS OF STORAGE TESTS

	Per Cent	Oven 34° C., 2 Months	Oven 37° C., 1 Month	Refrigerator 10° C., 3 Months	Room Temperature 25° C., 3 Months
Aluminum merthionate	5	Unchanged	Unchanged	Unchanged	Unchanged
Ammoniated mercury	5	Unchanged	Slightly discolored	Unchanged	Unchanged
Belladonna extract	10	Unchanged	Unchanged	Unchanged	Unchanged
Benzocaine	4	Slightly discolored	Discolored	Unchanged	Slightly discolored
Benzoic and salicylic acid	12 6	Slightly discolored	Discolored	Unchanged	Unchanged
Boric acid	5	Unchanged	Unchanged	Unchanged	Unchanged
Burow's solution	10	Slightly discolored	Discolored	Unchanged	Unchanged
Calamine	17	Unchanged	Unchanged	Unchanged	Unchanged
Coal tar	5	Unchanged	Unchanged	Unchanged	Unchanged
Ichthammol	10	Unchanged	Unchanged	Unchanged	Unchanged
Methyl salicylate	50	Unchanged	Unchanged	Unchanged	Unchanged
Peru balsam	10	Bleeding	Broken	Unchanged	Unchanged
Phenol	2	Unchanged	Slightly discolored	Unchanged	Unchanged
Pine tar	10	Unchanged	Broken	Unchanged	Unchanged
Resorcinol	10	Slightly discolored	Discolored	Unchanged	Unchanged
Scarlet red	5	Unchanged	Unchanged	Unchanged	Unchanged
Sulfadiazine	5	Unchanged	Unchanged	Unchanged	Unchanged
Sulfur, precipitated	10	Unchanged	Unchanged	Unchanged	Unchanged
Zinc oxide	10	Unchanged	Unchanged	Unchanged	Unchanged
Tannic acid	20	Broken	Broken	Broken	Broken

Peru balsam and pine tar remained stable at room temperature but broke down at 37°. It is not surprising that certain of these ointments indicated varying degrees of deterioration at temperatures of 34° and 37°. It is, on the other hand, encouraging that so many of them remained stable.

The base can be recommended for use in any country where the climate is not too hot and where satisfactory storage facilities are available.

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A SIMPLE *Washable Ointment* BASE

by | **Samuel W. Goldstein***

OINTMENT bases can be divided roughly into two main groups according to their oleaginous or water-miscible nature. Many of the newer bases are water-soluble, water-emulsifiable, or water-washable members of the latter group (1–5). This report presents a pharmaceutically convenient and efficient water-washable, emulsifiable ointment base which requires no other levigating agent for the incorporation of different types of drugs.

Experimental

The ingredients used in the preparation of the ointment base are the nonionic polyethylene glycols 4000 and 400, and polyethylene glycol 400 monostearate.[1] The glycols can be added as separate ingredients when heat is used; or the combination, in the form of Polyethylene Glycol Ointment U. S. P., can be used in the formulation of small batches at room temperature. The formula can be represented as:

Emulsifiable Glycol Ointment Base (Base G)	
Polyethylene glycol 400 monostearate	26
Polyethylene glycol 400	37
Polyethylene glycol 4000	37
To make	100

Mix and melt the glycols at about 65° C. then stir while cooling to about 40° C. Melt the polyethylene glycol 400 monostearate at about 40° C., add the liquid to the glycol mixture with stirring until a uniform ointment is obtained.

The first step is similar to the preparation of Polyethylene Glycol Ointment U. S. P., and the formula for Base G can be written as:

Polyethylene glycol 400 monostearate	26
Polyethylene glycol ointment	74

If the PEG 400 monostearate is a uniformly smooth product, it need not be melted before mixing with the PEG ointment. If a small amount of Base G is prepared, the PEG 400 monostearate, even if lumpy, can be rubbed smooth and free from small clumps on a tile or in a mortar before adding the PEG ointment to it. If a small portion of an ointment is to be compounded, and none of the prepared Base G is on hand, the medicinal agent can be levigated with and incorporated in the PEG 400 monostearate before adding the PEG ointment portion of the base.

(Continued on next page)

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[1] The polyethylene glycol 400 monostearate was contributed by Alrose Chemical Co., P. O. Box 1294, Providence, Rhode Island. Polyethylene glycols 400 and 4000, and polyethylene glycol 400 monostearate are available in small lots from R. F. Revson Co., 243 W. 17th St., New York 11, N. Y., and from other small-lot suppliers.

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Author's Summary

An ointment base that is relatively free from incompatibility problems is prepared from the nonionic polyethylene glycols 400 and 4000, and the nonionic emulsifying and dispersing agent polyethylene glycol 400 monostearate.

If the glycol mixture is obtained in the form of polyethylene glycol ointment, the base can be prepared extemporaneously without the use of heat.

The base is an excellent levigating material for many prescribed ingredients that usually require special treatment before incorporation into ointment bases.

Studies showing the relation between the *p*H of ointment base ingredients and the *p*H of the compounded bases are reported.

The simplicity and convenience of the type of ointment base described herein should be helpful in extemporaneous compounding.

Base G can be prepared by mixing and melting the glycols and the PEG 400 monostearate and stirring until congealed. This product is not as white as when the other compounding procedures are used, but it is very smooth with a pearly sheen. The medicated ointments compounded with this product are similar in all respects to those compounded with the whiter ointment base.

Replacement of the glycol mixture in the formula for Base G by enough cholesterol to have two per cent in the final product (dissolve the cholesterol in the melted PEG 400 monostearate at 80° C. and mix with the melted glycols at 80° C.) yields a base that has excellent spreading properties, is firm at 25° C. and softer at 40° C. It offers no advantage over Base G as a water absorption base.

Modification of Base G to include 5 per cent of white wax in the formula yields a product that does not prevent the solution of the PEG fraction in water when the latter constitutes 20 per cent or more of a mixed preparation. The modified base is less readily removed by washing with water than is Base G.

Materials incorporated in Base G and some observations of the products are given in Table I. In all cases, the incorporated material could be levigated with a small portion of the base on a tile or in a mortar, and the "primary ointments" mixed readily with the remainder of the base.

Discussion

Addition of more than 25 per cent of water to Base G yields a product that is too thin when other ingredients are not included. The amount of water that might be required as a solvent for a drug that is to be incorporated in the base would seldom exceed 20 per cent of the ointment, and these products are stable at ordinary temperatures. However, the tendency of the PEG fraction of the base to dissolve in the incorporated water, when the latter is 20 per cent or more of the total weight and the product is kept at 40° C. (104° F.), would recommend the selection of another type of base when more than 10–15 per cent of aqueous solutions are to be incorporated.

***p*H Effect of Ointment Base and Buffers.**—According to Blank (6), reported measurements of the *p*H of human skin should more accurately refer to the aqueous fluid bathing the cells of the skin surface. Harry (7) tested normal skin surfaces of many individuals and he reported that the *p*H of the skin varies among individuals, in different parts of the same individual, and at different times in the same part of one individual. Reported values for the *p*H of skin vary from *p*H 4 to 7.5, but Blank and Harry agree that the majority of their readings in exposed areas of the skin are between *p*H 4.2 and 5.6. Harry refers to the aqueous skin fluid as the "acid mantle" and suggests that preparations intended for use on normal skin should not interfere with it.

The nature of the ointment base can largely determine the *p*H effect of ointments on the skin. An oleaginous base containing acid or alkaline drugs might not alter the skin *p*H greatly, but it also might not permit efficient diffusion of the drugs to the affected site.

Water-miscible vehicles tend to aid diffusion into and through the acid mantle of the skin.

The amount of aqueous fluid at the site of ointment application might modify the *p*H effect of the ointment. In order to determine the effect of different amounts of water on the apparent *p*H of the prepared base, with and without buffering materials, the following tests were made.

Applying the U. S. P. test for *p*H under polyethylene glycol 4000, respective *p*H values of 4.0 and 4.4 were obtained for the PEG 4000 and the PEG 400 that were used in the present work. The Polyethylene Glycol Ointment U. S. P. that was prepared from these glycols showed *p*H 4.1; and the ointment base that was prepared by mixing PEG 400 monostearate 26 parts with 37 parts each of PEG 4000 and PEG 400 showed *p*H 4.2.

The concentration of the bases and ointments in water was altered by the addition of 5-cc. portions of distilled water to 10 Gm. of the base or ointment. It was assumed that the ointments, prepared by the addition of 10 cc. of buffer solution to 90 Gm. of base, contained 10 per cent of water. The *p*H readings obtained with the ointment bases, with the bases and incorporated buffering materials, and with these mixtures dispersed in different amounts of distilled water are given in Fig. 1.

The *p*H value of a solution containing a specified low concentration of a substance is useful in limiting impurities that might influence the *p*H under the test conditions. This value, however, would seem to bear little if any relation to the *p*H effect the substance might have on the skin surface under the conditions of therapeutic application. The data given in Fig. 1 indicate that polyethylene glycol ointment and the ointment base composed of that glycol combination and polyethylene

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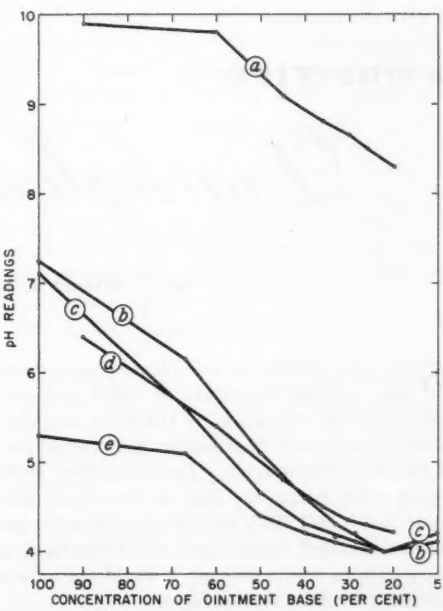
TABLE I.—OBSERVATIONS OF OINTMENTS PREPARED WITH BASE G

Substance Added to Base Per Cent w/w or v/w	Method of Mixing[a]	Compatibility (Reaction or Separation)[a] 25° C.	40° C.	Consistency[a,b] 25° C.
Alcohol 10	M	E	E	E
Benzoic acid 12 and salicylic acid 6	M	P	L	S
Benzoic acid 6 and salicylic acid 3	M	E	G	E
Borax-boric acid buffer solution (*p*H 8.9) 10	M	E	E	E
Boric acid 10	T	E	E	E
Burow's solution 10	T	E	E	E
Calamine 17	T	E	E	E
Camphor 10 and isopropyl alcohol 10	M	E	E	E
Coal tar 1 and zinc oxide 20	T	E	E	E
Coal tar 5 and zinc oxide 20	T	E	E	E
Coal tar solution 5	M	E	E	E
Glycerin 10	T	E	E	E
Ichthammol 10	T	E	E	E
Mercuric oxide, yellow, 1	T	E	E	E
Peanut oil 10	T	G	G	E
Peru balsam 5	T	E	E	E
Phenol 6.4	T	E	E	E
Potassium acid phthalate buffer solution (*p*H 4.0) 10	M	E	E	E
Resorcinol 10	T	E	E	E
Sorbitol 3.5 (Sorbo 5, water 5)	M	E	E	E
Sorbitol 7 (Sorbo 10)	T	vF	E	vF
Sulfur 10	T	E	E	E
Water 25	M	E	L	E
Water 10	M	E	E	E
Zinc oxide 20	T	E	E	E
Zinc peroxide 10	T	E	E	E
Zirconium oxide 2	T	E	E	E

[a] E = excellent, F = firm, L = liquid, M = mortar, P = poor, S = soft, T = tile, v = very.
[b] All the products were softer at 40°.

Fig. 1.—Potentiometrically determined *p*H values of ointment bases and of ointments containing buffer materials, and of dispersions of the products in different amounts of water. Readings were made at 25° with a Beckman glass electrode *p*H meter, Model H-2.



a—10% Borax-Boric acid buffer solution (*p*H 8.9) in Ointment Base (c)
b—Polyethylene Glycol Ointment, U. S. P.
c—Ointment Base: Polyethylene Glycol 400 Monostearate 260 Gm., Polyethylene Glycol Ointment 740 Gm.
d—10% Potassium acid phthalate buffer solution (*p*H 4) in Ointment Base (c)
e—10% Boric acid in Ointment Base (c)

Ointment Bases

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glycol 400 monostearate exhibit neutral to slightly acid reactions, the acidic nature being more positively demonstrated when water is present. It is also evident that the *p*H of the prepared base can be raised to the alkaline range by the addition of suitable buffers.

Incompatibilities.—Although Base G appears to be relatively free from incompatible tendencies, it should be noted that substances like bacitracin that are affected by the free hydroxyl groups of glycols should not be incorporated in this base.

When large amounts of powders with drying tendencies, such as calamine or magnesium oxide, are to be used, the addition of 1 per cent of glycerin or of Sorbo as a humectant is desirable. This prevents shrinkage and cracking of the products when kept for long periods.

Properties of the Compounded Ointments.—The ointments prepared with Base G spread easily and smoothly to any desired thickness of film. They do not vanish with inunction. When applied to the skin or the scalp, the ointments can be removed readily by lavage with water. The detergent action of PEG 400 monostearate aids the removal process.

When polyoxyethylene glycol 8-monostearate[2] was used in place of PEG 400 monostearate in the formula for Base G, the bases were similar in all respects and there were no differences in the properties of the ointments compounded with them.

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[2] Contributed, as Myrj 45, by Atlas Powder Co., Wilmington, Del. This lot of material meets all the U. S. P. requirements for polyethylene glycol 400 monostearate.

A MODIFIED *Diachylon Ointment* BASE

by **Willard J. Hadley***

SINCE the deletion of lead oleate plaster from the National Formulary, in 1950, and suspension of its production by the large manufacturers, many retail pharmacists have turned perforce to making it again. Dermatologists, while using it less frequently than in times past, concede that it still fills a need as an application *per se* to excoriated surfaces and as a component of preparations which without it would not adhere properly to moist skin surfaces.

With a view to finding a surer and more practical means of preparing and storing lead plaster than that lately official, we have made and observed the following products for periods of several months to more than a year:

(*a*) Impure lead oleate by the N. F. method for Mercury Oleate; i. e., warming together lead monoxide and oleic acid;

(*b*) Lead oleo-palmitate by the method of U. S. P. VIII, employing Hard Soap, N. F. and crystalline lead acetate in aqueous dispersions;

(*c*) Lead oleate bearing traces of lead carbonate, by ion exchange between lead acetate and potassium oleate, preparing the latter by reacting potassium hydroxide with oleic acid;

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(*d*) Impure lead oleate (containing oxidation products of oleic acid) by ion exchange between lead acetate and ammonium oleate, preparing the latter by reacting ammonia water with oleic acid.

(*e*) Practically pure lead oleate by ion exchange between lead acetate and sodium oleate, preparing the latter by reacting sodium hydroxide with oleic acid.

Equivalent amounts of all reagents were found to give the same yields (approximately 100% of the theoretical) as employment of 10 per cent excesses of the acid. When excess acid was used, the product was washed first with aqueous triethanolamine, then with distilled water.

The product obtained in every instance, above, except (*d*) was initially eggshell white and odorless. Product (*d*) was yellowish and possessed a slightly rancid odor, due no doubt to oxidation of the oleic acid by the alkali.

Products (*b*), (*c*), and (*e*) were washed free of acetate by-product, as indicated by the *p*H of the washings, then stored under water, away from light. Product (*a*) was rolled into a cylinder and wrapped in aluminum foil.

Preparation (*a*) turned brownish within five months. Preparation (*b*) was yellowish but usable at the end of a year. Preparation (*c*) retained its initial color for a full year, but this was found due in part to the presence of lead carbonate (chalky white), samples of the preparation giving off CO_2 when dissolved in acetic acid. Product (*d*) was not stored. Product (*e*) was a waxy white mass or, when thoroughly dried, an unctuous white powder, and retained these characteristics for more than a year in storage, although exposed to the light several times for brief periods. It fused at 60–70° and solidified at 60°.

When lead oleate in fused state is stirred with water, as in the washing of the above products, it takes up from a third to a half of its weight of water, forming a w/o emulsion. Much, but not all, of this water can be expressed from the mass with mortar and pestle. The product can be dried to a soft powder (for use in preparations in which the presence of water is objectionable) by fusing it, spreading it shallowly in an evaporating dish, placing it in a vacuum desiccator over sulfuric acid, and removing air from above it as completely as possible with a pump. The powder product was not found superior, in any of the tests performed, to the mass. The latter was found by the toluene distillation method to hold, on the average, 25 per cent of water.

Preparation (*e*), above, was found capable of blending in equal amounts with every ointment, ointment base, and ointment base material—with exceptions to be noted below—with which it was mixed. It was added to all the official ointments except penicillin ointment (which is incompatible with fusion temperatures as well as with water), anthralin ointment (which, like penicillin ointment, we deemed, should not be stirred into hot fusion mixtures), N. F. Sun Cream (in which its employment would hardly be reasonable because it is not desirable that the cream adhere as firmly as the presence of a metallic soap would cause it to do), and the ophthalmic ointments (in which, for obvious reasons, its use would not be advised).

It was found possible to add it in desired proportions to all the official ointment bases, both lipophilic and hydrophilic. The latter did not retain their water-washable properties when lead oleate was added, but they were removable from the skin with ordinary toilet soap in water.

Ointment base materials of all structural classifications except the lower diols and triols (propylene glycol, polyethylene glycol 400, and glycerol) and ethylene glycol monoethers (Cellosolve) were observed to form homogeneous mixtures with lead oleate.

Mixtures with water-miscible materials, such as polyethylene glycol 4000, Carbitol, sulfonated oils, tweens, sodium lauryl sulfate, petroxolins, and medicinal soft soap, are removable from the skin by means of water alone, without the aid of any other detergent or solvent. Mixtures with other hydrophilic materials such as polyethylene glycol monostearate, wool fat, and the Spans, are easily removed with ordinary toilet soap in water.

Lead oleate can be substituted for only very small portions of the hydrocarbons in dermatologic pastes, because it makes these preparations too stiff and tacky for easy application or easy removal. Thus also in preparations that contain large amounts of bentonite, zinc oxide, or precipitated sulfur, it appears unsuited.

The author recommends as follows:

Lead plaster for any of its uses be made by the formula and procedure for preparation (*e*) above (using equivalent amounts of sodium hydroxide, oleic acid, and clear, crystalline lead acetate).

After washing until acetates are removed, the lead plaster be stored under water in a dark place.

For the quantities that are to be used in other preparations, it first be squeezed as nearly dry as possible (in a glass mortar, with a glass pestle), and then weighed as the lead plaster and employed without regard for the water that it holds.

A.PH.A. Women's Auxiliary

1954 Greetings from Your President

"A bright New Year and a sunny track
Along an upward way.
And a song of praise on looking back
When the year has passed away
And golden sheaves, nor small, nor few
This is my New Year's wish for you."

No doubt we made mistakes in 1953, but 1953 is gone and we are now in 1954 forgetting the past, except for the lessons we were taught. We must never let our mistakes hold us back but let new ideas and desires lead us, we hope, to greater and better things. With each of you helping, the Auxiliary will continue to grow and be of more value to all concerned.

You will soon receive the notice for payment of your next year's dues. Remember we voted to send the notice out in January instead of April to expedite the work of the Treasurer. Please try and return your payment promptly. It will take only a moment of your time. Do not wait until convention time, for, as you know, that is such a busy time. We all want to meet old friends, go places and do things. If you will do your part now there will be less confusion and more leisure so all may really enjoy the program as planned for the convention.

Have you heard of any young lady student interested in drawing on our Loan Fund? If so, write to Mrs. L. David Hiner, our First Vice-President. Keep this Loan Fund in mind for we would like to see it used.

The names and addresses of your officers and district chairmen are printed below.

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Mrs. Ray S. Kelley, President, 14 Bowdoin Street, Newton Highlands 61, Mass.
Mrs. George A. Moulton, Honorary President, 49 Main Street, Peterborough, N. H.
Mrs. L. David Hiner, First Vice-President, 2548 Skyline Drive, Salt Lake City, Utah.
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Mrs. L. L. Riggs, District VII, 4201 S. W. Council Crest Drive, Portland 1, Ore.
Mrs. E. L. Cataline, District VIII, 602 Wellesley Drive N. E., Albuquerque, N. M.

Now you can send the names and dues, for new members, to your District Chairman. She will be glad to hear from you.

Keep all your state, county, and city auxiliaries alive to the fact that there is an A.PH.A. Women's Auxiliary. Remember we would like to know when you are having meetings, especially a state meeting, for we would like to send our greetings. Unless you are interested in contacting us, there is little we can do under our present setup, to contact you. We would enjoy a closer contact with all pharmaceutical auxiliary groups. You do your part and we will endeavor to do ours.

As president of the Women's Auxiliary of the AMERICAN PHARMACEUTICAL ASSOCIATION I would appreciate receiving a copy of your yearly programs. Much may be gained by the exchange of ideas.

The New Year is ours to use for the good or ill of all mankind. Let us try to forget self and work for others that good may come to all.

(Signed) Sincerely,
DORIS P. KELLEY, *President*

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liquid vitamin preparation

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PALADAC pleases mothers, too. It flows freely, needs no refrigeration, and may be given directly from the teaspoon or added to milk, fruit juice or other foods.

each teaspoonful (4 cc.) of **PALADAC** contains:

Vitamin A	5,000 units
Vitamin D	1,000 units
Vitamin C (ascorbic acid)	50 mg.
Vitamin B_1 (thiamine hydrochloride)	3 mg.
Vitamin B_2 (riboflavin)	3 mg.
Nicotinamide	20 mg.
Pantothenic Acid (as sodium salt)	5 mg.
Vitamin B_6 (pyridoxine hydrochloride)	1 mg.
Vitamin B_{12} (crystalline)	5 mcg.

PALADAC is supplied in 4-ounce and 16-ounce bottles.

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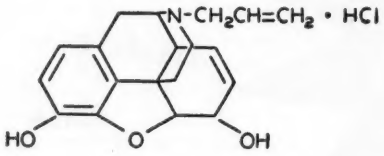
PRODUCTS RECENTLY ACCEPTED BY THE A. M. A. COUNCIL ON PHARMACY AND CHEMISTRY

NALORPHINE HYDROCHLORIDE.—Nalline Hydrochloride (Merck).—$C_{19}H_{21}NO_3.HCl$.—M. W. 347.83.—The structural formula of nalorphine hydrochloride may be represented as follows:



Actions and Uses.—Nalorphine is a derivative of morphine and therefore subject to control under the Federal Narcotic Law. Its action, however, is considered to be pharmacologic rather than chemical, because it exerts little or no analgesic effect and antagonizes such narcotic analgesics as morphine, meperidine, and methadone. Nalorphine promptly reverses the respiratory depression and increases both the minute volume and rate of respiration in patients narcotized by large doses of these compounds. It is not active against the depression produced by barbiturates, cyclopropane, or ethyl ether.

Nalorphine as the hydrochloride is useful as an antidote in the treatment of accidental overdosage and to combat alarming symptoms of extreme narcosis produced by morphine, its analgesic derivatives, meperidine, and methadone. It is not useful as a cure or for the relief of narcotic addiction. The drug may be administered ten minutes prior to delivery of parturient woman to overcome meperidine respiratory depression of the newborn. Its use in excessively narcotized subjects should not exclude other appropriate supportive therapy. Until the effects of long-term use become known, or are found to be harmless, it should be used only for acute conditions.

Nalorphine hydrochloride appears to be relatively safe, although the lethal dose has not been established for man. Although doses up to 40 mg. per kilogram of body weight are tolerated by experimental animals, it is considered advisable to limit single doses in man to not more than 40 mg. High dosage is usually accompanied by dysphoria, miosis, pseudoptosis, lethargy, mild drowsiness, and sweating. Occasionally nausea, heaviness in the limbs, and hot and cold flashes occur. Pallor, similar to that which accompanies intravenous injection of morphine, is sometimes observed. In morphine addicts, administration of the drug may be followed by typical abstinence changes, such as yawning, rhinorrhea, lacrimation, goose flesh, vomiting, and restlessness.

Dosage.—Nalorphine hydrochloride is administered as a solution by injection intravenously, intramuscularly, or subcutaneously, depending on the rapidity of action desired. Intravenously, the usual adult single dose is 5–10 mg., repeated in ten to fifteen minutes if adequate increase in pulmonary ventilation is not obtained. The effect of the drug lasts from two to three hours, and the total dosage to be given depends on the degree and duration of the depression. In severe cases of poisoning, doses as high as 40 mg. may be employed.

Tests and Standards.—

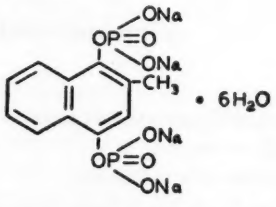
Physical Properties: Nalorphine hydrochloride is a white, odorless, crystalline powder, m. p. 265–270°. It is completely soluble in water, very slightly soluble in chloroform, and practically insoluble in ether. The amount which dissolves in alcohol to form 100 ml. of solution is 6.1 Gm. The *p*H of a 0.5% solution is 4.4–5.5.

[For more information regarding tests and standards see *J. Am. Med. Assoc.*, **152,** 45 (May 2, 1953).]

Merck & Company, Inc., Rahway, N. J.

Solution Nalline Hydrochloride. 1- and 2-cc. ampuls. A solution containing 5 mg. of nalorphine hydrochloride in each cubic centimeter. Stabilized with 0.2 per cent sodium bisulfite and buffered with 1.5 per cent sodium citrate.

SODIUM MENADIOL DIPHOSPHATE.—Synkayvite Sodium Diphosphate (Hoffmann-LaRoche).—$C_{11}H_8Na_4O_8P_2.6H_2O$.—M. W. 530.22.—The hexahydrate of the tetrasodium salt of 2-methyl-1,4-naphthalenediol diphosphate.—The structural formula of sodium menadiol diphosphate may be represented as follows:



Actions and Uses.—Sodium menadiol diphosphate, a dihydro derivative of menadione, has the same actions and uses as other analogs of vitamin K. Sodium menadiol diphosphate is water-soluble and therefore absorbed following oral administration without bile salts. It is also effective by parenteral administration.

Dosage.—Sodium menadiol diphosphate is administered orally and by injection subcutaneously, intramuscularly, or intravenously. On the basis of molecular weights, the dosage should be at least three times that of menadione to provide a theoretically equivalent amount of vitamin K activity. The calculated ratio is 3.1 mg. of sodium menadiol diphosphate to 1 mg. of menadione. For the management of prothrombin deficient hemorrhagic states, the average dose for adults should range from 3–6 mg. daily and may be administered orally or parenterally as the situation requires. Larger doses may be given if necessary. As an antidote for bishydroxycoumarin overdosage, a dose of 75 mg. intramuscularly, repeated as often as necessary, is rec-

ommended. For the prevention of hemorrhage associated with prothrombin deficiency caused by salicylates after tonsillectomy, a total daily dosage of 10–25 mg. (administered in three divided doses) is recommended. For the prevention of hemorrhagic disease of the newborn, either 6–12 mg. is administered parenterally to the mother during labor, or 3 mg. is given to the infant immediately after delivery.

Tests and Standards.—

Physical Properties: Sodium menadiol diphosphate is a white or pink to light brown hygroscopic powder with a characteristic odor. It is very soluble in water, and insoluble in alcohol and ether. The *p*H of a 1% solution is 7.8–8.5.

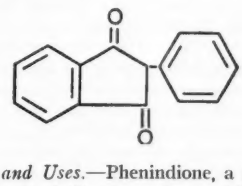
[For more information regarding tests and standards and dosage forms see *J. Am. Med. Assoc.*, **152**, 46 (May 2, 1953).]

Hoffmann-LaRoche, Inc., Nutley, N. J.

Solution Synkayvite Sodium Diphosphate: 1-cc. ampuls.—An isotonic solution containing 5–10 mg. of sodium menadiol diphosphate in each cubic centimeter. 2-cc. ampuls.—An isotonic solution containing 37.5 mg. of sodium menadiol diphosphate in each cubic centimeter. Stabilized with sodium metabisulfite and preserved with 0.45 per cent phenol.

Tablets Synkayvite Sodium Diphosphate: 5 mg. U. S. patent 2,359,132. U. S. trademark 393,117.

PHENINDIONE.—Hedulin (Walker).—$C_{15}H_{10}O_2$.—M. W. 222.23—2-Phenyl-1,3-indandione.—The structural formula of phenindione may be represented as follows:



Actions and Uses.—Phenindione, a synthetic anticoagulant, is similar in action to bishydroxycoumarin and its derivatives but is chemically unrelated. It is effective orally for lowering of the blood concentration of thrombin in the management of conditions characterized or complicated by intravascular clotting. (See New and Nonofficial Remedies under the monographs on bishydroxycoumarin, cyclocumarol, and ethyl biscoumacetate.)

Phenindione acts more promptly than does bishydroxycoumarin and is effective in smaller doses. Therapeutic levels are usually obtained within eighteen to twenty-four hours following the institution of therapy. Cumulative effects have not been observed and the prothrombin time of the blood usually returns to normal within twenty-four to forty-eight hours after the drug is discontinued. As an anticoagulant the agent is thus considered to be relatively safe. However, the predictability and controllability of its effect is not considered superior to other short-acting oral anticoagulants.

As with all systemic anticoagulants, the drug should not be given to patients with a hemorrhagic tendency, such as hemophilia, thrombocytopenic purpura, and leukemia with pronounced bleeding tendency, or to patients with open wounds or ulcerations, particularly of the gastrointestinal tract.

Dosage.—Phenindione is administered orally. The initial total daily dosage should be 0.2–0.3 Gm., half given in the morning and half at bedtime. Patients weighing less than 70 Kg. should be given 0.2 Gm. daily; those weighing more than 70 Kg. should receive 0.3 Gm. daily. This usually does not result in excessive lowering of the blood prothrombin level, but subsequent dosage is subject to adjustment in accordance with prothrombin time determinations. Maintenance dosage should be adjusted to lengthen the prothrombin time from two to two and one-half of normal values. The maintenance dosage may vary from 0.05–0.1 Gm. per day, given in the same manner as the initial dose. The average maintenance dose is approximately 75 mg. When this has been established by daily prothrombin determinations for the first three days, the tests for prothrombin time need be repeated only at seven–fourteen day intervals, or as may be indicated by the patient's response. If hemorrhage occurs the drug should be immediately withdrawn and, when necessary, 50–75 mg. of vitamin K should be administered intravenously with or without transfusions of fresh whole blood or plasma.

Tests and Standards.—

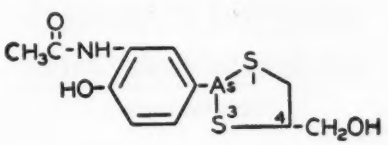
Physical Properties: Phenindione is a pale yellow, crystalline material, which is practically odorless, m. p. 148–151°. It is very slightly soluble in water. The amounts which dissolve in the following solvents to form 100 ml. of solution are: 1.0 Gm. in alcohol and 0.9 Gm. in ether.

[For more information regarding tests and standards and dosage forms see *J. Am. Med. Assoc.*, **152**, 142 (May 9, 1953).]

Walker Laboratories, Inc., Mount Vernon, N. Y.

Tablets Hedulin: 50 mg.

ARSTHINOL.—Balarsen (Endo).—$C_{11}H_{14}AsNO_3S_2$.—M. W. 347.27.—Cyclic 3-hydroxypropylene ester of 3-acetamido-4-hydroxydithiobenzenearsonous acid.—2-(3′ - Acetamido - 4′ - hydroxyphenyl) - 1,3-dithia-2-arsacyclopentane-4-methanol.—The structural formula of arsthinol may be represented as follows:



Actions and Uses.—Arsthinol is a trivalent arsenical with indications somewhat similar to the pentavalent arsenicals previously available for oral use. Pentavalent arsenicals presumably are reduced to trivalent compounds in the body, and act in the latter form.

Arsthinol, when administered by mouth, has been demonstrated to be effective against intestinal amebiasis and yaws. There is no adequate evidence that the substance is effective against nonintestinal amebiasis, but it may be of value against other intestinal protozoa. However, the latter claims require further substantiation.

Dosage.—Arsthinol should be given in courses lasting five days. The daily oral dose is 10 mg. per kilogram of body weight, with a maximum of 500 mg. in twenty-four hours. Ordinarily the entire daily dose is taken following breakfast.

(Continued on next page)

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*T.M. Reg. U.S. Pat. Off.

N.N.R.

• • • • • • • • • • *from preceding page*

Tests and Standards.—

Physical Properties: Arsthinol is a white, odorless, microcrystalline powder, m. p. 163–166°. It is very slightly soluble in ether and water. The amount that dissolves in alcohol to form 100 ml. of solution is 2.7 Gm.

[For more information regarding tests and standards and dosage forms see *J. Am. Med. Assoc.*, **152**, 531 (June 6, 1953).]

Endo Products, Inc., Richmond Hill, N. Y.

Tablets Balarsen: 0.1 Gm.

ZINCASATE BURN DRESSING.—Zinax Burn Dressing (Hynson, Westcott & Dunning).—Zincasate burn dressing consists of zincasate gel, a partially hydrolyzed casein gel, and zincasate gauze, a zinc acetate impregnated gauze.

Actions and Uses.—Zincasate, a combination of partially hydrolyzed casein gel and zinc acetate impregnated gauze to be applied separately, is used as a dressing for the local treatment of burns by the closed pressure bandage technique. The gel, first applied over the injured area, is converted promptly into an insoluble coagulum at the point of contact with the zinc acetate impregnated gauze to form an adherent, protective, semipermeable membrane that permits the evaporation of water while reducing the loss of transudates. The gel will set eventually without the aid of zinc acetate gauze, so that the layer next to the wound is not immediately coagulated. The gauze, through its union with the adherent gel, provides some pressure and a surface to which an elastic bandage can be applied to increase pressure where this is feasible. The combined use of these materials should follow the same general principle and aseptic technique applicable to the use of petrolatum and plain gauze. The use of a coagulable protein and zinc acetate gauze has the slight advantage of convenience of application, avoidance of maceration, less need for redressing, and production of a pliable protective film permitting easier movement and transport of the patient.

Dosage.—Zincasate gel and gauze dressing are applied after removal of obvious dirt or necrotic tissue, with sterile technique but without surgical débridement. The casein gel should be applied to superficial as well as to more deeply injured areas to a thickness of not less than $^1/_8$ in. (0.3 cm.) and should extend beyond the borders of such areas. This is then covered with strips of the zinc acetate impregnated gauze, over which a pressure bandage is applied. Alternatively, the gel may be applied to the gauze, which is then placed over the injured area with the gel side in apposition to the wound. In first degree burns or burns that exhibit only erythema the dressing is usually removed the following day. In superficial second degree burns, the dressing may be left intact until healing occurs. At that time the dressing will readily drop away from the wound. Earlier removal can be accomplished by soaking the dressing with warm isotonic sodium chloride solution. In deep second and third degree burns, where grafting may be necessary, the surface is frequently ready for grafting within nine to twelve days. In such cases it is advantageous to hasten removal of necrotic tissue by redressing once during this period. In severe burns, the gel film separates readily after the dead skin becomes lysed. It is not necessary to use occlusive bandages on the hands,

arms, or face or in other areas where this is not feasible. Gauze is applied longitudinally to the extremities, rather than encircling the limb, to avoid abnormal constriction or pressure at vulnerable points. For small or facial burns, the gel and gauze may be applied as a patch without elastic bandage.

Tests and Standards.—

[For information regarding tests and standards see *J. Am. Med. Assoc.*, **152**, 611 (June 13, 1953).]

ZINC ACETATE.—$C_4H_6O_4Zn.2H_2O$.—M.W. 219.50—The structural formula of zinc acetate may be represented as follows:

$$(CH_3C(=O)-O)_2Zn$$

Tests and Standards.—

Physical Properties: Zinc acetate is a white, crystalline solid having a pearly luster and a very faint acetic acid odor; upon exposure to air the crystals gradually effloresce. It is freely soluble in water and soluble in alcohol. The *p*H of a 1 % solution is 5.5–7.0.

[For more information regarding tests and standards see *J. Am. Med. Assoc.*, **152**, 611 (June 13, 1953).]

Hynson, Westcott & Dunning, Inc., Baltimore, Md.

Zinax Burn Dressing: 8.18-cc. tubes of zincasate gel packaged with 10 gauze pads and 118.3-cc. cans of zincasate gel packaged with 2 yards of gauze. The gauze is impregnated with approximately 30 per cent zinc acetate by weight. U. S. patent 2,579,367.

REVISION OF N. N. R. STATEMENT ON TESTES

In the customary annual reconsideration of the text of New and Nonofficial Remedies it was pointed out to the Council that exaggerated and unwarranted claims are made for the use of these agents in the so-called male climacteric. In order to promote rational use and to establish reasonable limits to such claims the Council adopted the following paragraph to be inserted in the general statement on testes (*N. N. R.* 1952, p. 367):

"A spontaneous cessation of hormone release by the testis with aging has been recognized as a rare entity termed male climacteric or menopause. Symptoms are similar to those of the female menopause. In the vast majority of instances, the vague manifestations of a psychoneurosis are incorrectly confused with those of organic testicular disorder. Criteria for laboratory confirmation of the diagnosis of male climacteric are equally confused. At present, such diagnosis probably is not justified without the demonstration of castration levels of urinary gonadotropin, as in the female. Testosterone provides effective replacement therapy only in the true disorder."

The Council has hitherto accepted only preparations of testosterone propionate and methyl testosterone. As corollary to the preceding decision the Council voted also to consider preparations of free testosterone.

NEW GENERIC AND BRAND NAMES RECOGNIZED BY THE COUNCIL

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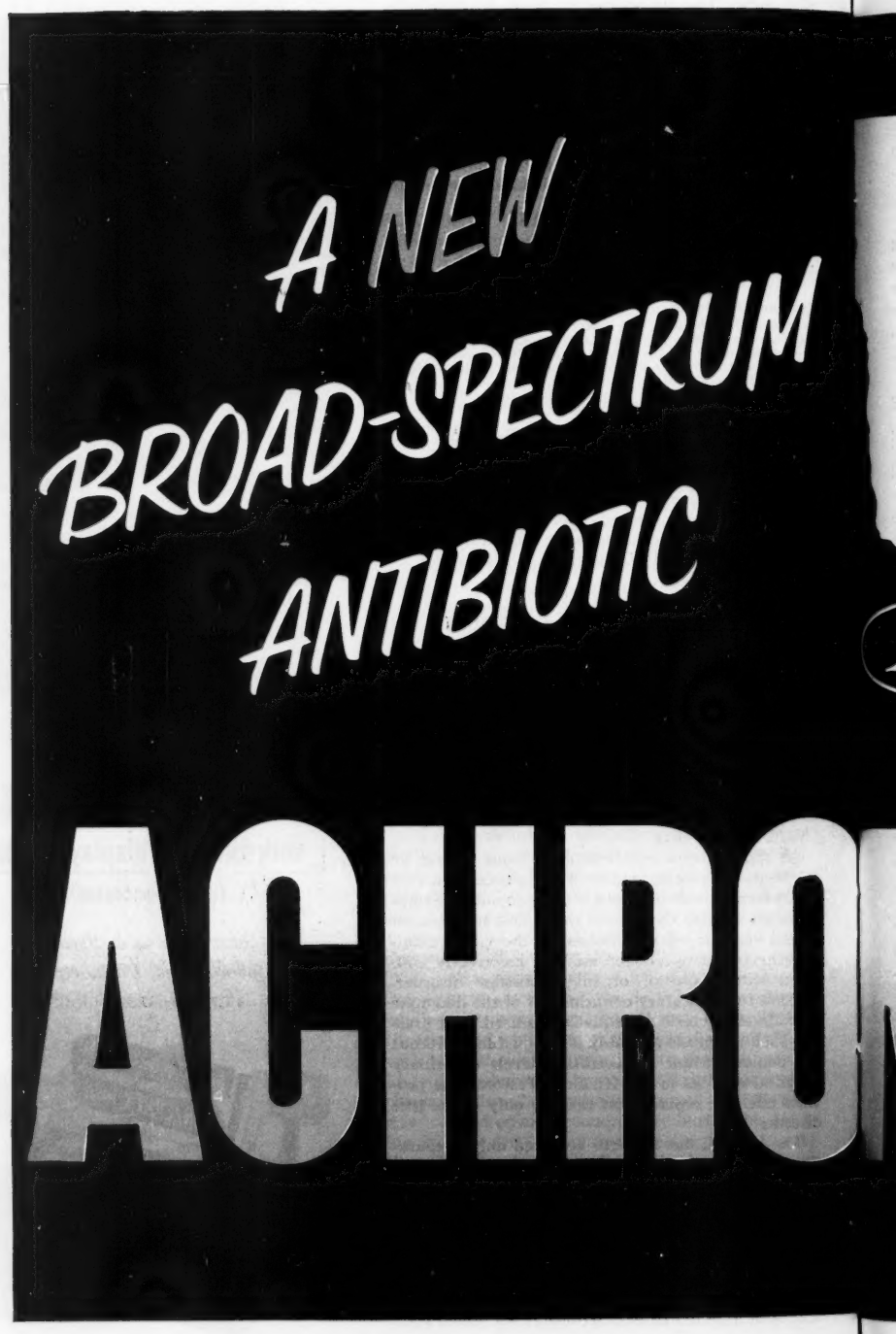
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FROM THE SECRETARY'S DIARY FOR DECEMBER, 1953

1st Today in Boston with Melvin Green to inspect the New England College of Pharmacy. Late in the morning addressing the A.PH.A. Student Branch at the Massachusetts College of Pharmacy at a well conducted meeting and with some of the faculty courteously taking the same punishment as the students. All of the afternoon and evening spent with the faculty and trustees of the New England College of Pharmacy and noting many improvements in the equipment of the building.

2nd Completing inspection of the New England College of Pharmacy and moving on to Providence, R. I., for inspection of the Rhode Island College of Pharmacy and Science. In the evening a spirited discussion with the faculty, mostly on teaching methods and curriculum.

3rd Continued inspection of the Rhode Island College of Pharmacy and addressing the student body on opportunities in pharmacy. In the afternoon a trip to Kingston, R. I., where the State University is located, to inspect the campus and facilities and to give advice on possible merger of the College with the University.

4th Final discussions with the Rhode Island College faculty and trustees last night at a pleasant dinner in the Providence-Biltmore Hotel; and this morning reviewing notes of these inspections while pulling into Union Station for a day of preparation for the National Drug Trade Conference which meets tomorrow, and catching up with the mail.

5th All day at the Washington Hotel with the National Drug Trade Conference listening to reports on practically every topic now engaging the interest of pharmacists and serving on the Resolutions Committee which is always stuck with the job of trying to interpret the views expressed, so that there may be unanimous consent in the final recording.

7th This evening in New York City at the dinner honoring Remington Medalist, Hugh C. Muldoon, who made an acceptance address which will live long in the annals of American pharmacy for its splendid philosophy, completeness, terse and often beautiful phraseology.

8th Yesterday morning and most of today inspecting St. John's University College of Pharmacy and finding much in the way of new facilities, equipment, and faculty. In the evening attending the Annual Dinner of the American Pharmaceutical Manufacturers Association where Dr. Paul White, noted heart specialist, received the annual award of the Association.

12th The previous days and today preparing reviews of the year's activities for various records and publications and planning for the months ahead. Soon the Congress will be back and then the legislative program of the present administration will be unfolded.

19th All this past week in conferences and staff activity reviewing, among other things, the status of pharmacists in the military service and getting ready to communicate with all service men who have been in contact with these Headquarters in the past year or more. While we have known that the correspondence with service men was heavy, we did not realize that we have had personal contact with more than a thousand pharmacists in the Armed Forces either by letter, telephone, or personal visit in the past year.

26th The Christmas holidays have come and gone and the usual hustle and bustle, coupled with the terrific year-end correspondence and general effort to complete assignments which will serve to record the year's activities, leaves most of us tired and ready for the long week ends characterizing both Christmas and New Year holidays this year. . This evening an episode at the building which serves to emphasize the importance of good police protection.

28th Among the visitors at the building today were more than 100 members of Kappa Psi pharmaceutical fraternity who were holding their annual Grand Council Meeting in Washington. Sorry to learn that Ray Kelley, the efficient secretary of this organization, was prevented from being among those present through illness, but his superb planning was reflected in the unusually good attendance and the enthusiasm of the more than forty chapter representatives from all over the United States who made this a memorable occasion.

31st And now we come to the end of another calendar year which is but a short span in the history of pharmacy and of this ASSOCIATION. Whatever recorded history may show of its accomplishments is due to the loyal cooperation of the members of this ASSOCIATION whose desires, so well expressed in resolutions, furnish the basis for staff action.

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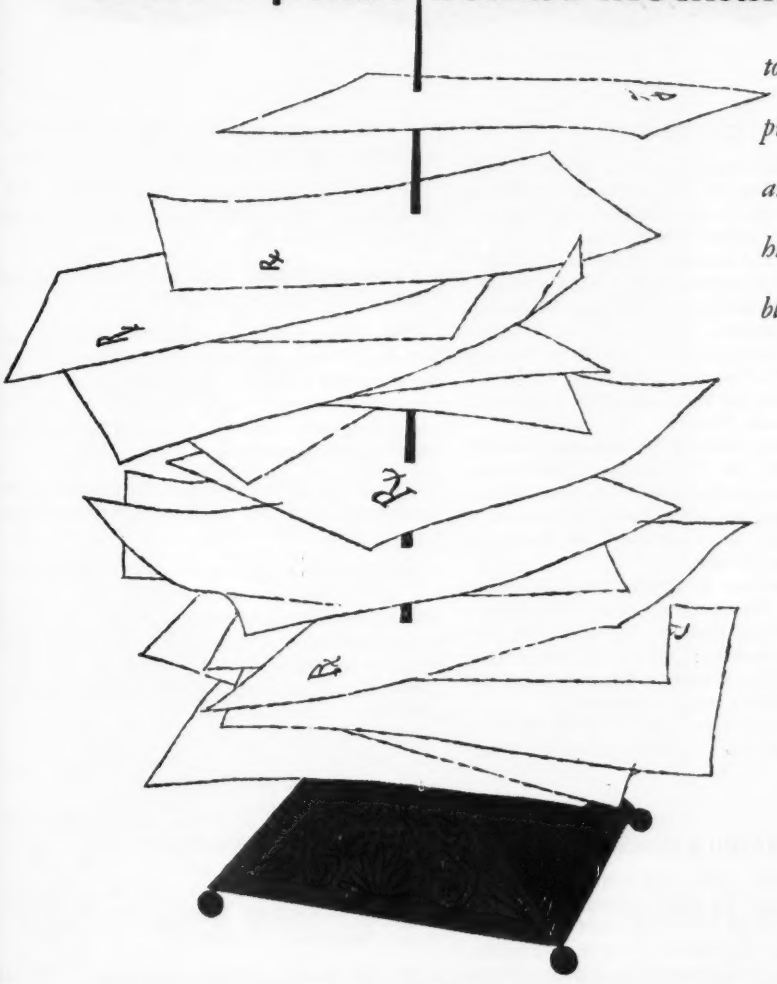

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Stock both!

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BRIEFLY NOTED

COLLEGES

At the Christmas Assembly of the students of the **Philadelphia College of Pharmacy and Science** on December 17, fifteen scholarships were awarded. Neil M. Davis, senior, was awarded the Borden Award. The Pharmaceutical Foundation Scholarship was awarded to Raymond J. Schiffman; the Josiah C. and Bertha L. DeG. Peacock Scholarship to L. Robert Moyer; the Thomas S. Wiegand Scholarship to Daniel J. Kulina; the Peter Williamson Scholarship to Joseph D. Fabrizio; the Thomas H. Powers Scholarship to Lindbergh A. Corena-H., of Colombia, South America.

Junior students received the following awards: Elmer K. Shaffer, the Pharmaceutical Foundation Scholarship; Paul A. Feicht, Jr., the James T. Shinn Scholarship; Emanuel Joseph Russo, the Edward C. Jones Scholarship; John Anthony Lash, the Henry and W. P. Troth Scholarship.

Sophomores who received awards at this meeting were: Stella Kamradziuss, the Pennsylvania Alumni Scholarship; Donald J. Vannucci, the John M. Maisch Scholarship; Robert D. Smyth, the William L. Cliffe Memorial Scholarship; Irvin Rothberg, the Robert Bridges Scholarship.

The Breyer Ice Cream Company Scholarship for the freshman year was awarded to Harold C. Sheaffer.

MANUFACTURERS

Rolland J. Main, Ph.D., has been appointed advertising manager for **Eaton Laboratories, Inc.** Former professor of physiology and lecturer in pharmacology at the Medical College of Virginia, Dr. Main joined the Eaton staff as medical editor in 1947.

Dr. Elmer L. Sevringhaus has been appointed vice-president in charge of clinical research at **Hoffmann-LaRoche, Inc.** Formerly chairman of the Department of Medicine at the University of Minnesota School of Medicine, Dr. Sevringhaus is clinical professor of medicine at New York Medical College.

Hoffmann-LaRoche has also announced the appointment of Dr. John A. Aeschlimann as vice-president in charge of chemical research. Dr. Aeschlimann is a life Fellow of the Chemical Society of London and the New York Academy of Sciences.

R. Blayne McCurry has been named president of **Schenley Laboratories, Inc.**, and Budd Mittleman has been appointed to the post of advertising manager for the same company.

Dr. Charles H. Mann has been elected a vice-president of **Bristol Laboratories, Inc.** He serves Bristol as medical director.

The Ames Company of Elkhart, Ind., has named George W. Orr, Jr., vice-president.

Chas. Pfizer & Co. has announced the promotion of John J. Powers, Jr., to senior vice-president and the election of Jasper H. Kane and Thomas J. Winn to vice-presidencies. Kane is director of research and development and Winn, general manager of Pfizer Laboratories Division.

William D. Pratt, who has been with **Abbott Laboratories** since 1951, has been named copy director.

Dr. Harry W. Rudel and Dr. Jack W. Strode have been appointed to the medical service staff of **Pfizer Laboratories,** Brooklyn, N. Y. Dr. Rudel was formerly medical consultant for Parke, Davis & Co., and Dr. Strode's pharmaceutical experience includes posts in the medical divisions of Merck & Co. and Lederle Laboratories.

ASSOCIATIONS

Norman Taylor has retired as director of the **Cinchona Products Institute** in New York. The Institute is suspending its activities in the United States and all correspondence regarding it should be addressed to Cinchona Instituut, 142 de Lairessestraat, Amsterdam—Z, Holland.

Dr. Ernest H. Volwiler, president of Abbott Laboratories, has been elected chairman of the Board of Directors of the **American Chemical Society.** He will succeed Dr. Charles Allan Thomas, president of the Monsanto Chemical Company, who is retiring from the board after serving as its chairman for the past four years.

Kenneth Williamson has been appointed associate director of the **American Hospital Association** in charge of the Washington Service Bureau.

The Third Pan-American Congress of Pharmacy and Biochemistry will convene in 1954 in São Paulo, Brazil. This city was selected because it will be

(Continued on page 64)

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For reducing and diabetic diets—sweetness without calories. SUCARYL stays sweet in cooking, has no bitter aftertaste in ordinary use. Pharmacies supply SUCARYL Sodium Tablets in bottles of 100 and 1000 and SUCARYL Sweetening Solution, sodium or calcium form, in 4-fluidounce bottles. Like new recipe booklet for patients? Write Abbott Laboratories, North Chicago, Illinois. Abbott

LOCAL BRANCHES

A joint meeting of the **Northern New Jersey Branch** of the A.PH.A. was held November 11 with the New Jersey Chiropodists' Society at Rutgers College of Pharmacy.

Dr. Jack P. Horwitz, president of the Society, gave a brief talk on "Professional Relations," and "The Scope of Chiropody" was the topic selected by Dr. William B. Ignatoff, chairman of the Professional Relations Committee of the Society.

At the meeting January 13, 1953, Sol Herzog, Professor of Jurisprudence at Columbia University College of Pharmacy, addressed the Branch on "Legal Aspects Confronting Present Day Pharmacy."

The **Washington Branch** of the A.PH.A. held its monthly meeting on December 16 at the Smithsonian Institution, Arts and Industries Building.

After a short business meeting, George Griffenhagen, associate curator, Division of Medicine and Public Health, presented a brief address and conducted the members on a tour of exhibits in the Division of Medicine and Public Health.

The **New York Branch** of the A.PH.A. met November 9 at St. John's University College of Pharmacy, Brooklyn, N.Y. Highlight of the occasion was a talk by Frank Schley, Parke, Davis & Co., entitled "Present Day Status of Antibiotics." Mr. Schley covered the development of antibiotics from the work of Fleming to the present day.

The meeting drew an audience of sixty, and was presided over by Dean John L. Dandreau, president of the Branch.

At the November meeting of the **Michigan Branch** of the A.PH.A., Dr. Claire L. Straith, one of the founders of the American Board of Plastic Surgery, spoke on "The Psychology of the Disfigured."

The December meeting was jointly sponsored by the Branch and the Michigan Academy of Pharmacy. Principal speaker was Dr. Harvey Merker, whose topic was "Milestones in Medicine and Pharmacy." He is director of Scientific Relations for Parke, Davis & Co.

The **Baltimore Branch** of the A.PH.A. met November 20 at the Belvedere Hotel, Baltimore. The guest speaker was C. J. Von Schilgen of the R. P. Scherer Corp. whose topic was "Strange Hunger."

The **Oregon Branch** of the A.PH.A. met on November 19, 1953, and elected the following to office: R. Franklin Hart, president; Tom Ogle, vice-president; Richard V. Uffleman, recording secretary, and Harland Belscamper, treasurer.

A gavel was presented to Layke L. Seaton, the outgoing president.

The **Greater Los Angeles Branch** of the A.PH.A. together with members of the U. S. C. College of Pharmacy Alumni, the American College of Pharmacists, and the Southern California Society of Hospital Pharmacists, met November 6, 1953, at the Statler Hotel, Los Angeles, Calif. Speakers were California Governor Goodwin Knight, who spoke on "Legislative Trends," and Newell Stewart, secretary of the Arizona Board of Pharmacy, whose topic was "Look Up, Mister."

The **Philadelphia Branch** of the AMERICAN PHARMACEUTICAL ASSOCIATION held a dinner meeting November 12, 1953, at which Dr. W. Paul Briggs spoke on the American Foundation for Pharmaceutical Education of which he is executive director.

Twenty-one pharmacists were voted membership in the Branch.

STUDENT BRANCHES

The **Montana State University Branch** met on November 11, 1953. First on its agenda was organization for its membership drive, and a committee was appointed to promote the campaign.

The Branch unanimously accepted a resolution calling for a Student Section within the framework of the A.PH.A.

The December meeting, held on December 2, was sponsored by Johnson & Johnson.

The regular monthly meeting of the **University of Toledo Branch** was held November 17. At this time, the committee for the Christmas dance was appointed, consisting of Russ Griesmer, chairman, Marcia Widmer, Penny Myers, and Vic Buzzelli.

Plans were made at the December 2 meeting of the **Temple University School of Pharmacy Branch** for the May, 1954, convention. Committee heads were appointed, and all fraternities and sororities were represented. Joseph Zdrojewski, president, presided.

Albert Donovan presided at the December 1 meeting of the **Massachusetts College of Pharmacy Branch** at which Dr. Robert P. Fischelis, secretary of the A.PH.A., spoke on "Opportunities for pharmacists in Government and the Armed Forces."

At the November 10, 1953, meeting of the **University of Tennessee Branch,** Treve Chumley, delegate to the A.PH.A. Convention, spoke on highlights of the Convention. James P. Lockert presided, and

(Continued on page 60)

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Branches

• *from page 58*

some forty-five members, plus student body guests, were in attendance.

The **University of Buffalo Branch** met on November 12 for the purpose of having an open discussion on the College of Pharmacy's curriculum. Pat Dodd made comparisons with other schools' curricula; Hugh Lindstrom gave the freshman view of the curriculum; and Carroll Thornton and Church Boshart discussed the merits, respectively, of four- and five-year pharmacy courses.

Dr. Wallace F. White was guest speaker at the November 18, 1953, meeting of the **University of Minnesota Branch.** Dr. White is associate professor of Pharmacognosy at the College of Pharmacy. His subject was the new five-year curriculum at the College which he lauded because it included additional courses that are vitally needed.

The Branch met on December 9, and was addressed by William H. Hull, manager of the Pharmaceutical Promotion Division of *Postgraduate Medicine.* In his talk entitled "Public Relations in the Pharmacy," Mr. Hull emphasized that sevice best demonstrated ideal public relations.

Dr. Huselton, Professor of Chemistry at the College of Pharmacy, was guest speaker at the November 9 meeting of the **West Virginia University Branch.** His subject was, "The Present Importance of Quantitative Analysis."

The Branch unanimously adopted a resolution calling for formation of a Student Section within the framework of the A.PH.A.

Johnson & Johnson representatives presented *Design for Selling,* a motion picture, at the November meeting of the **Purdue University Branch.** The presentation dealt with modern selling and merchandising techniques, and attracted an audience of 120, presided over by Harold Novotny, Branch president.

The Branch, together with Kappa Psi, Kappa Epsilon, and Rho Chi, sponsored the annual Pharmacy Round-Up on December 3 at Lafayette, Ind.

Lemont Kier presided at the November meeting of the **Ohio State Branch** at which some 140 were in attendance. Arthur Tye, Doctor of Pharmacology at the College, was the guest speaker. Dr. Tye related some of his experiences in the pharmaceutical field in China, and discussed the requirements for becoming a member of the profession in that country.

At the November 10 meeting of the **State College of Washington Branch,** the guest speaker was A. B. Hintz of the National Cash Register Co. His topic was "Men, Money and Merchandise," and by way of illustration, a motion picture film was shown depicting the effective management of money and personnel.

Mr. W. R. Ward, president of the North Carolina Pharmaceutical Association, was guest speaker at the November meeting of the **University of North Carolina Branch.** His topic was "The Horse and Buggy Pharmacist versus the Jet Pharmacist."

The **University of Kansas Branch** met on November 23, 1953, at which time plans were made for the annual Christmas party, held December 15, 1953.

Guest speaker was Mr. T. J. Walker, district supervisor of the Narcotics Bureau, who discussed narcotics laws and regulations.

Marvin Ganik presided at the November 10 meeting of the **Rutgers University Branch.** Appointed to the membership committee were Martin Daffner, chairman; Al Mitrotz, senior cochairman; Stanley Michels, senior cochairman, and Joe Bena, junior chairman.

The following officers were elected at the November 10 meeting of the **Medical College of South Carolina Branch:** Donald James, president; Ernest Hesse, vice-president; Ann Hogue, secretary, and Johnny Hiott, treasurer.

At the December 8 meeting of the Branch it was reported that their membership drive has upped Branch enrollment to 80 per cent of the student body.

The **University of Iowa Branch** met November 18, 1953, and was addressed by Dean Emeritus Teeters who related some of his experiences as the state toxicologist. Some sixty were in attendance, and Carl Johnson presided.

George Daughters, of the Federal Food and Drug Association, was guest speaker at the December 1 meeting of the **University of Maryland Branch.** Mr.

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Plan now for your Son and Daughter to begin their studies in Pharmacy *this* September. Help them to gain interesting and successful careers in your pharmacy through an education at this institution, oldest yet most modern of its kind in the Americas. B.Sc. degrees Graduate study and research to M.Sc and D.Sc. degrees. Courses also in Schools of Chemistry, Bacteriology and Biology. Write for free catalog.

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Daughters spoke on the Federal Food and Drug Act with special attention to the Durham-Humphrey Act.

Attendance was large at the annual Pharmacy Seminar held November 18, 1953. The details and registration for the Seminar were carried out by members of the **Howard College (Ala.) Branch.** Many pharmacy students from Alabama Polytechnic Institute, Auburn, Ala., were present as well as a number of retail pharmacists and wholesalers. Guest speaker was Dr. Paul Olsen, Director of Marketing Research of DRUG TOPICS.

The junior and senior classes are reported to have obtained 100 per cent membership in the A.PH.A., and a campaign is currently under way to achieve the same results in the sophomore and freshman classes.

The **University of South Carolina Branch** met November 18, 1953. The Membership Committee, consisting of Kenneth Flinchum, Richard Brickle, and James Segars, reported that they are close to achieving 100 per cent membership of pharmacy students in the A.PH.A.

The **Oregon State College Branch** met on September 30 and November 11, 1953. Approximately 40 attended each meeting. John Hensala presided over both meetings and, at the earlier one, Charles Bowler was elected vice-president, and Barbara Luebke, secretary.

The December 10 meeting of the Branch was given over to an address on "Merchandising Trends" by Robert Haxby, manager of two Rexall stores in Corvallis, Ore. John Hensala, presided, and 45 students attended.

On November 4, the **University of Utah Branch** had as its guest speaker Al Woods of E. R. Squibb & Co. who discussed local trends in pharmacy. David Langberg presided over the meeting, and approximately 75 people were in attendance.

The annual Christmas party of the Branch was held December 9, and attended by 110 people. A turkey dinner was served in the Union Building Cafeteria, and was followed by the presentation of a plaque by the Utah Women's Auxiliary of the A.PH.A. to the senior class for first attaining 100 per cent membership in the A.PH.A. The evening was concluded with the singing of carols in which everyone joined.

The **University of Connecticut Branch** met on December 7. Vice-President Mitchell Ross presided, and guest speaker was John Webb, chief pharmacist of Hartford Hospital, who spoke on the future of the graduate pharmacist in hospital pharmacy.

Fordham University Branch met on December 14, and unanimously endorsed a resolution calling for the formation of a Student Section within the framework of the A.PH.A.

On December 10, 1953, the **Howard University Branch** honored F. Royce Franzoni at a dinner in Baldwin Hall on the University Campus. Members of the District of Columbia Board of Pharmacy, representatives of the AMERICAN PHARMACEUTICAL ASSOCIATION, the Washington Pharmaceutical Association, and George Washington University College of Pharmacy joined the students and faculty for the occasion.

In his address, Mr. Franzoni, president of the A.PH.A., dwelt, principally, upon the Code of Ethics of the AMERICAN PHARMACEUTICAL ASSOCIATION and the obligations of the pharmacist to the public, to fellow pharmacists, and, to other health professions.

Newly elected officers of the Branch are: James Tyson, president; Joseph Schuman, vice-president; Jacqueline Majette, secretary-treasurer; and E. Willette Miller, assistant secretary-treasurer.

At the December 15 meeting of **St. John's University Branch,** the guest speaker was Stanley Rosenfeld, Eli Lilly & Co. representative, whose topic was "Diabetes and Insulin." Two hundred students and faculty members attended the meeting.

One hundred and twenty-five attended the special meeting held December 4 by the **Butler University Branch.** Faculty Adviser Earl F. Brake presided, and the guest speaker was Rachel Lehman, senior laboratory technician of Indiana University School of Medicine Laboratories. She discussed the objectives and significance of the frog test for pregnancy.

One hundred and forty students attended the December 10 meeting of the **Philadelphia College of Pharmacy Branch** which was held jointly with the **Temple University Branch.** Guest speaker was Dr. Bernard Witlin, associate professor of bacteriology at the College.

The following officers of the **Cincinnati College of Pharmacy Branch** will remain in office until the next election of Branch officers in May, 1954: Norman Dale Cox, president; Oscar Lee Hale, Jr,. vice-president; and Herbert Segal, treasurer.

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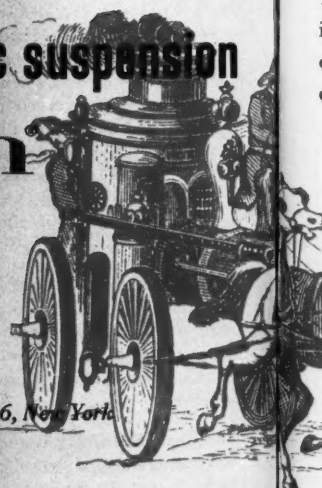

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Briefly Noted

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celebrating the 400th anniversary of its founding next year, and will be the center most likely to attract continental attention in scientific, technical, and industrial progress in the pharmaceutical field.

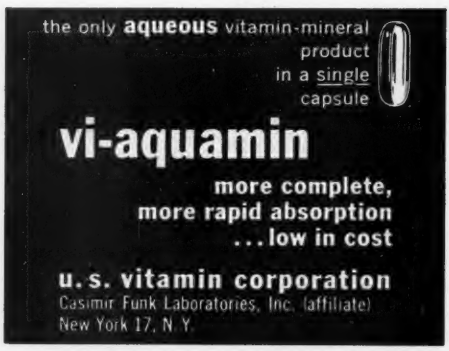
HOSPITAL PHARMACY

The AMERICAN PHARMACEUTICAL ASSOCIATION will again cooperate with the **American Hospital Association** and the **American Society of Hospital Pharmacists** in sponsoring the annual Institute on Hospital Pharmacy. Plans have been made to hold the 1954 Institute on the campus of the University of Connecticut, Storrs, Conn., during the week of June 28. Applications for registration will be sent to all members of the American Society of Hospital Pharmacists several months prior to the meeting, and detailed information concerning the program will be made available at a later date.

The Catholic Hospital Association will hold its 39th annual convention in Atlantic City, N.J., May 17–20, 1954. An Institute for Hospital Pharmacists will again be held in conjunction with the convention and program plans will be in charge of the the Catholic Hospital Association's Committee on Hospital Pharmacy Practice with Sister Mary Blanche, Sacred Heart Sanitarium, Milwaukee, Wis., as chairman.

The third in a new series of "March of Medicine" progress reports on the nation's health problems was telecast from the Clinical Meeting of the American Medical Association from St. Louis, Mo., Thursday evening, December 3.

The coast-to-coast telecast, over the entire NBC-TV network, was sponsored and produced by **Smith, Kline & French Laboratories.**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